New Product Ideas For Engineers — p. 42

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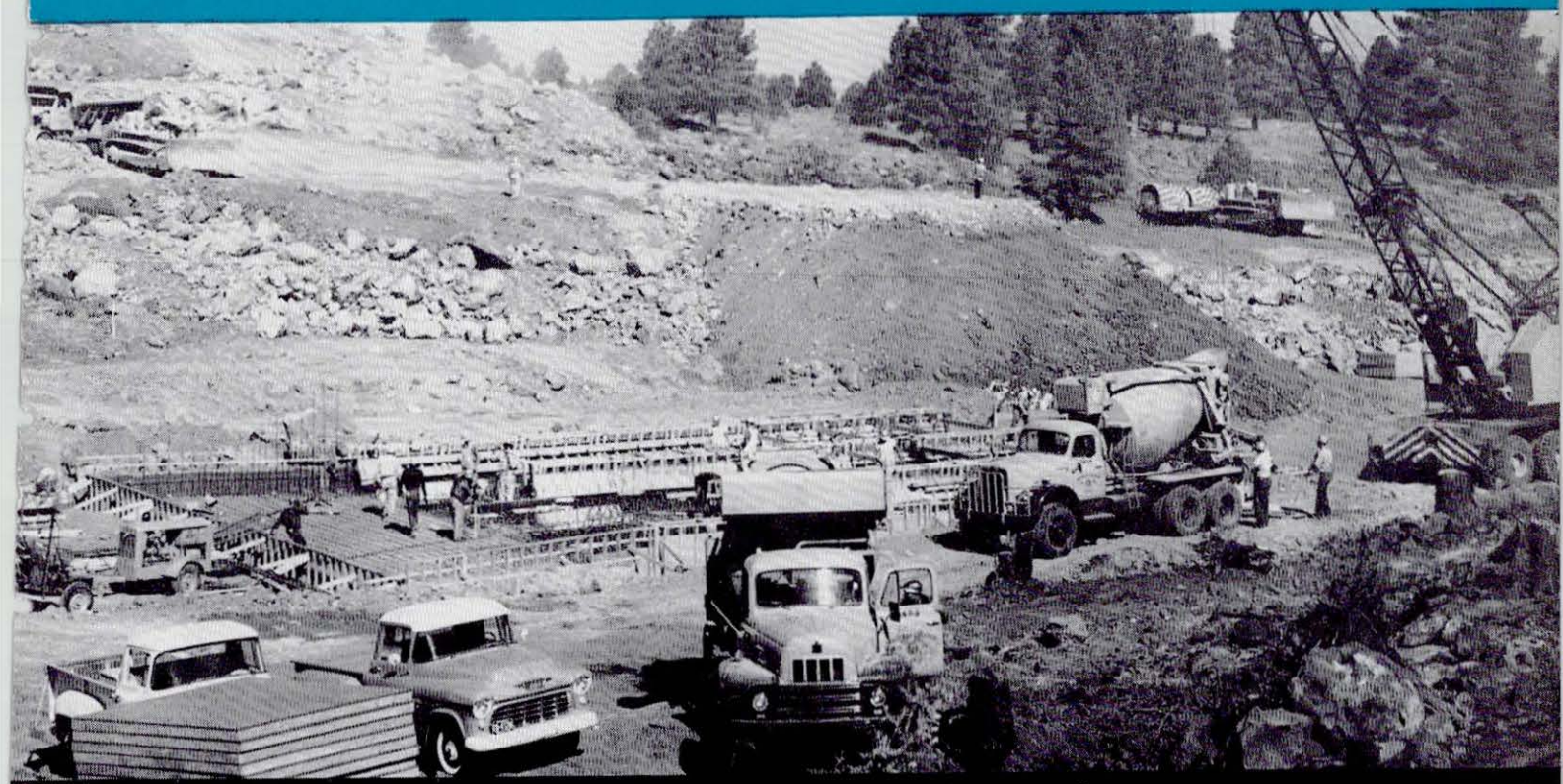
March 14, 1960

RAILWAY AGE *weekly*



↑ Big machines pace Santa Fe line change — p. 28

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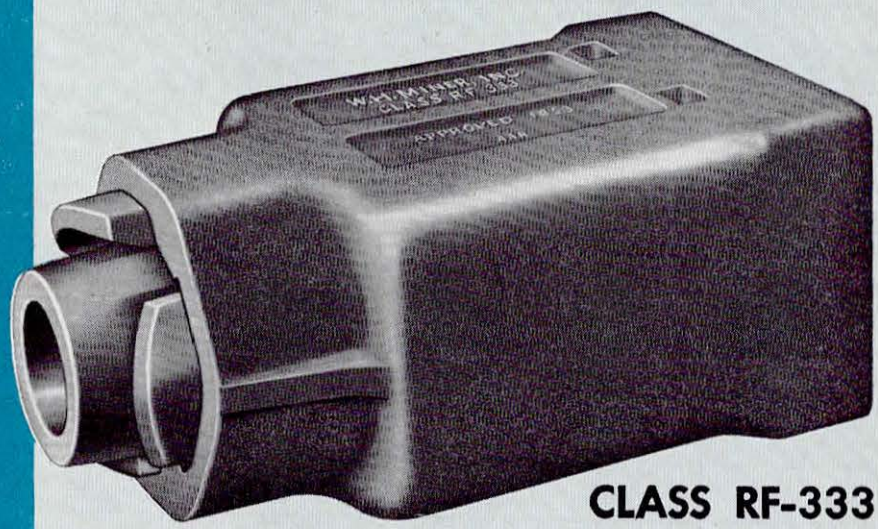

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RAILWAY AGE *weekly* March 14, 1960 • Vol. 148, No. 11

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Concrete-tie service tests hailed ..... p. 9

A widely-publicized ceremony in Florida last week signaled completion of the first major installations of prestressed concrete ties in the U. S.—an event that could be of great historical significance for the railroads. Here's Track & Structures Editor Merwin Dick's first-hand report on the Seaboard and Atlantic Coast Line installations.

TELL THE PEOPLE

STORMS: Primer for a 'Jet Age' p.69

The Philadelphia Inquirer (March 5) put the story in these words: "As residents of the Philadelphia area and other metropolitan centers dig their way out of snowdrifts this weekend, they should thank their lucky stars that the railroads were on the job when other means of transportation failed—as they nearly always are in a winter weather emergency." Railway Age tells the story in pictures starting on page 69.

N&W to build 85-ton hoppers p.18

The increasing importance of big-volume users of coal led to the design of the new car. Essentially, it's an elongated version of the standardized 70-ton hopper developed by N&W, C&O and PRR.

Complete AREA program ..... p. 22

Many special features highlight this year's three-day annual convention of the American Railway Engineering Association. The meeting, to begin March 14, will be held in the Sherman Hotel, Chicago.

Cover Story—Big machines pace Santa Fe line change ..... p. 28

The 44-mile-long project will remove the steepest ruling grade on the road's transcontinental line east of Barstow, Calif. Train running time will be improved when the new line goes into operation in early 1961.

New products for engineers and M/W personnel ..... p. 42

A comprehensive, useful and timely report on what's new in tools and equipment.

IC, SP open barge line bid p.60

Opposition from truckers, as well as barge operators, is ex-

pected as hearings open this week on a joint application by the two railroads to acquire a water common carrier, the John I. Hay Co.

The Action Page—Civil engineers should speak up ..... p. 74

No other professional group on the railroads is having its creative genius inhibited by government transportation policy to the degree that engineers are. What changes in the government policy do engineers believe are needed?

Short and Significant

Demountable trailer bodies . . .

will be a feature of the B&O's forthcoming fast-freight service between New York-New Jersey, Philadelphia and the St. Louis area. A refinement of and supplement to B&O's existing TOFCEE (trailer-on-flat-car) service, the new trailer bodies will be transferred from rail flat cars to wheeled chassis for highway movement by specially built mobile cranes. The railroad has constructed a fleet of specially-equipped 41-ft flat cars at Washington, Indiana, for use in this service. The cars have cushioned cradles in which the 36-ft long, 2,200 cu-ft capacity trailer bodies will lock automatically. The bodies can be stacked when not in use.

Mileage rate on tank cars . . .

will probably be increased one cent—from four and one-half cents to five and one-half cents—in the near future. This mileage allowance is paid by railroads to tank-car owners. It is fixed by a vote of railroads, and the voting was completed last week.

January's net income . . .

of Class I railroads is estimated at $30,000,000—up $9,000,000 from January 1959's $21,000,000. The AAR statement also showed, however, that 30 Class I roads failed to earn their fixed charges in January. Rate of return for the 12 months ended with January averaged 2.75%.

Train-off retarder bills . . .

now before the House Committee on Interstate and Foreign Commerce are opposed by the Eisenhower Administration. The bills propose to repeal or emasculate the 1958 Transportation Act's service-abandonment provisions. The under secretary of commerce for transportation, John J. Allen, Jr., has told the committee that "none of the bills under consideration provides a better solution to the chronic railroad passenger deficit than the existing law." The Chamber of Commerce of the U.S. has also advised the committee of its opposition to the bill.

Week at a Glance CONT.

Current Statistics

Operating revenues	
1 mo., 1960	$789,265,270
1 mo., 1959	784,161,653
Operating expenses	
1 mo., 1960	633,867,856
1 mo., 1959	644,544,329
Taxes	
1 mo., 1960	84,362,913
1 mo., 1959	78,905,591
Net railway operating income	
1 mo., 1960	43,566,271
1 mo., 1959	36,093,881
Net income estimated	
1 mo., 1960	30,000,000
1 mo., 1959	21,000,000
Average price railroad stocks	
Mar. 8, 1960 ...	91.10
Mar. 10, 1959 ..	109.65
Carloadings, revenue freight	
8 wks. 1960 ...	4,679,325
8 wks. 1959 ...	4,567,229
Freight cars on order	
Feb. 1, 1960	48,170
Feb. 1, 1959	29,470
Freight-cars-delivered	
1 mo., 1960	2,848
1 mo., 1959	1,940

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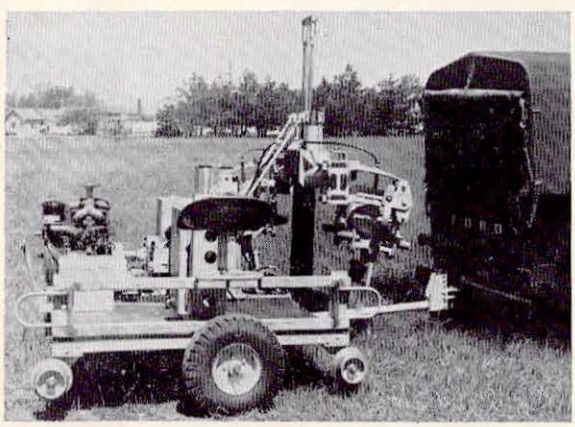

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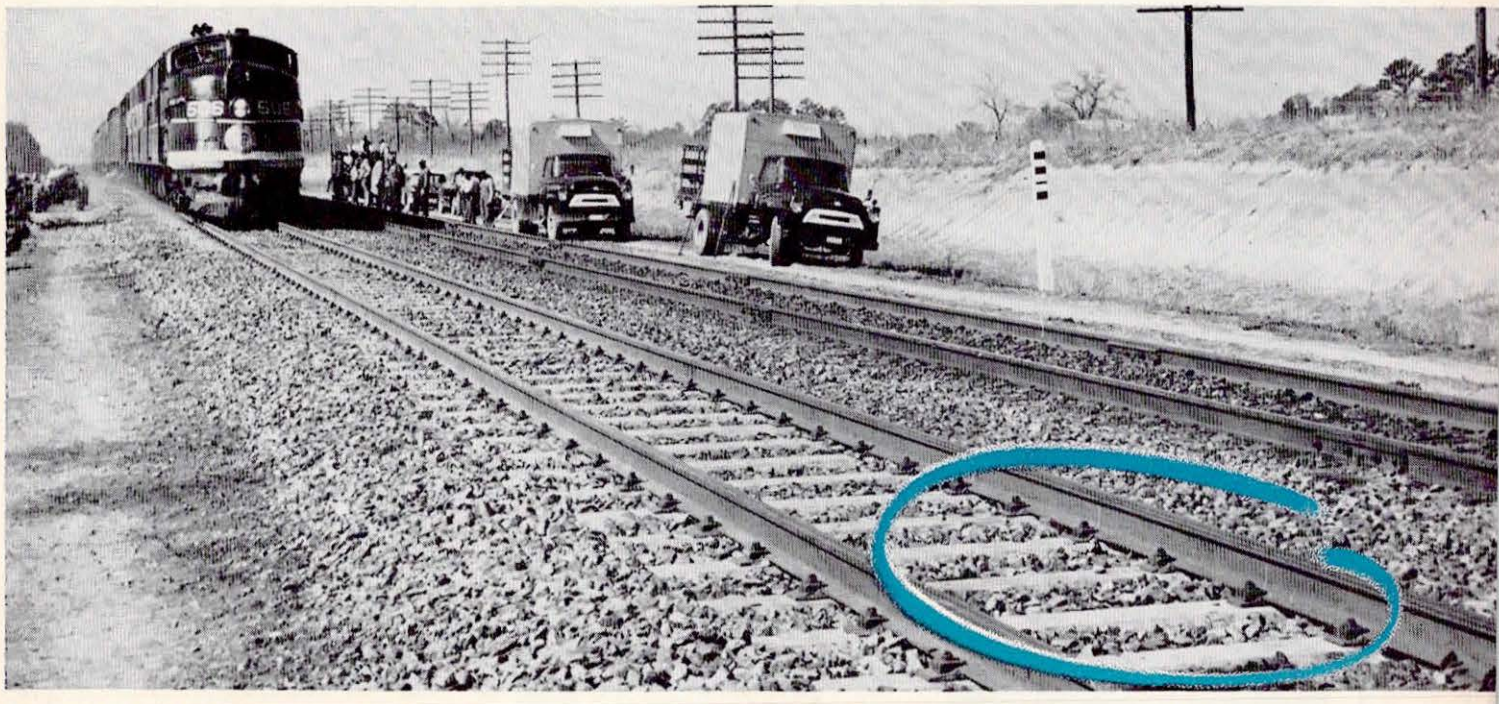


ACL TRACKMEN were putting finishing touches on concrete tie installation as this passenger train passed over it.

Concrete-Tie Service Tests Begin

► **The Story at a Glance: After three years of design work and laboratory tests, two major service tests of prestressed concrete ties have been made, one on the Atlantic Coast Line, the other on the Seaboard Air Line. Because of prestressing and other design features, the ties are expected to have an extended service life. Mass production methods, wider spacing in tracks and reduced maintenance requirements are counted on to help strengthen the economic position of the concrete ties. Here's Track & Structures Editor Merwin Dick's on-the-scene report from SAL's test site.**

Last Wednesday morning, near Tampa, Fla., about 250 people watched as a gold-plated bolt was inserted through a steel clip into a tie and then wrenched down until the clip was bearing tightly against the top of the rail base. Also gold-plated were the clip, the tie plate, and a lock washer forming part of the assembly.

This ceremony, which took place as cameras clicked and reporters scribbled, signaled completion of the first major installations of prestressed concrete ties in the United States.

Many of those present, including railroad maintenance officers from all over the United States, as well as from Canada and Mexico, were convinced they were witnessing an event of considerable historical significance. The basis for this conviction was the fact that the ceremony indicated the latest bid of the concrete tie to capture a portion of the crosstie market in this country had progressed from the design stage to the service-test stage. Many were also convinced the bid was being made in an economic and competitive climate that augured well for its ultimate success.

While the particular location where the installation took place is on the single-track main line of the Seaboard Air Line about seven miles due east of Tampa, the gold-bolt ceremony also symbolized completion of a similar installation of concrete ties on the Atlantic Coast Line near Four Oaks, N. C., some 50 miles south of Rocky Mount. This explains why L. E. Bates, chief engineer of the ACL, was one of four persons who took turns wielding the wrench. The others were T. B. Hutcheson, the Seaboard's chief engineer; G. M. Magee, the AAR's director of engineering research, under whose direction the ties were designed; and Douglas P. Cone, president of the American Concrete Crosstie Corporation.

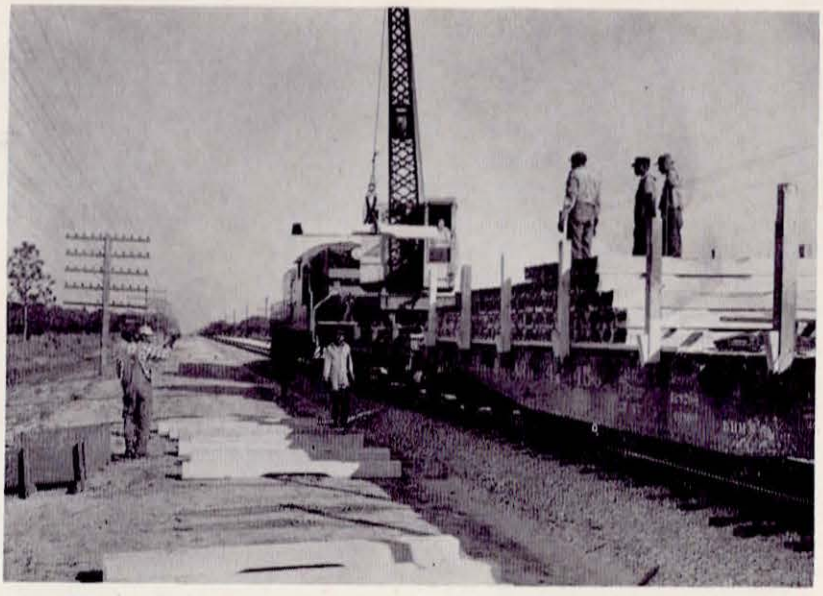
The Seaboard test installation consists of about 600 concrete ties placed under a quarter mile of 115-lb rail welded into continuous lengths. At each end the concrete ties extend two standard rail lengths beyond the welded rails. The installation on the ACL, located in double-track territory, will also be a quarter of a mile long under continuous rail, but the rail is of the 132-lb section. At the time of the gold-bolt ceremony 150 concrete ties had been installed in the ACL test section; the remainder will be installed later.

These test installations are the outcome of a cooperative project undertaken for the purpose of determining the practicability and economy of the prestressed concrete tie. The main elements in this program are:

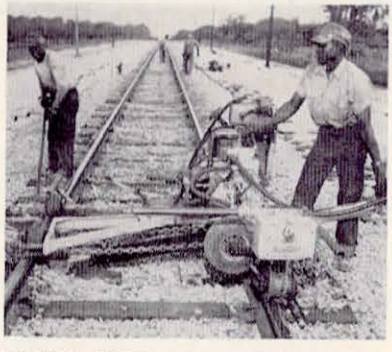
- The AAR research staff which not only designed the tie but which will make periodic inspections of the installations. These will include strain-gauge readings to determine actual stresses in the concrete tie under load.
- The two railroads. In addition to

(Continued on page 10)

SAL Installs Concrete Ties

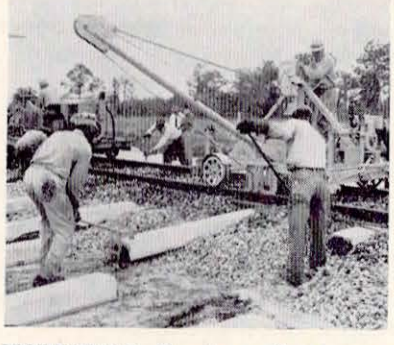


BURRO CRANE unloads concrete ties from flat cars. Weight of ties is 540 lb each.

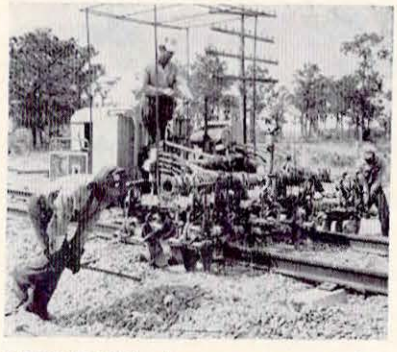


WOOD TIES are pushed out of track by Fairmont Tie Remover. At first only those ties were removed necessary to make way for alternate concrete ties.

FAIRMONT Tiebed Scarifier is used to prepare beds for concrete ties. Additional material was removed by workers armed with shovels.



NORDBERG Gandy pulls a concrete tie into position in the track. Note that only alternate concrete ties were being installed at this time.



CONCRETE ties are tamped immediately after installation by Jackson Multiple Tamper. Track was later raised and tamped out of face with Matisa tamper.

CONCRETE-TIE TESTS HAILED

(Continued from page 9)

making their tracks available for the tests, the ACL and the SAL provided the fastenings and the labor and machinery required for installation of the ties.

- The American Concrete Crosstie Corporation which contributed the ties that went into the test installations.
- Representatives of the Portland Cement Association who acted in a consulting capacity in the design of the tie and the mix used in its manufacture. Spearheading this activity for PCA is Leo P. Nicholson, railway representative of the association's Structural and Railways bureau.

Many installations of concrete ties have been made before in this country, dating as far back as 1893. Why, then, should test installations at this time command so much attention? The answer, according to persons close to the current undertaking, lies in this combination of factors:

- Modern techniques of concrete design and manufacture, including prestressing and air-entrainment. In previous installations of concrete ties premature failure occurred largely because the concrete was unable to withstand the effects of loads and weathering, particularly alternate freezing and thawing. Prestressing of the concrete and the use of an air-entrainment additive in the mix are expected to add many years to the life of the concrete tie as well as improving its performance under load.
- Demonstrated success of concrete ties in Europe. It is noted that, since the end of World War II, the use of concrete ties has grown rapidly in Europe, with millions now in service. Despite the wide differences in economic conditions, the result has been to stimulate interest in the concrete tie in this country.
- The effect of mass-production techniques in reducing the cost of the concrete tie. Ties of this type have always been at a disadvantage cost-wise with respect to the wood tie. To help overcome this disadvantage American Concrete Crosstie has devised an automatic machine which is said to be capable of producing prestressed concrete ties at the rate of two per minute.
- The carefully considered design of the tie installed, known as Tie "E". This design is the outcome of three years of study and research on the part of the AAR research staff. Every resource available, including laboratory testing under simulated field conditions, was used in developing a concrete tie de-

(Continued on page 15)

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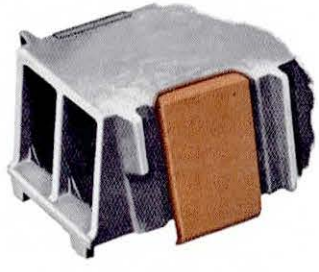
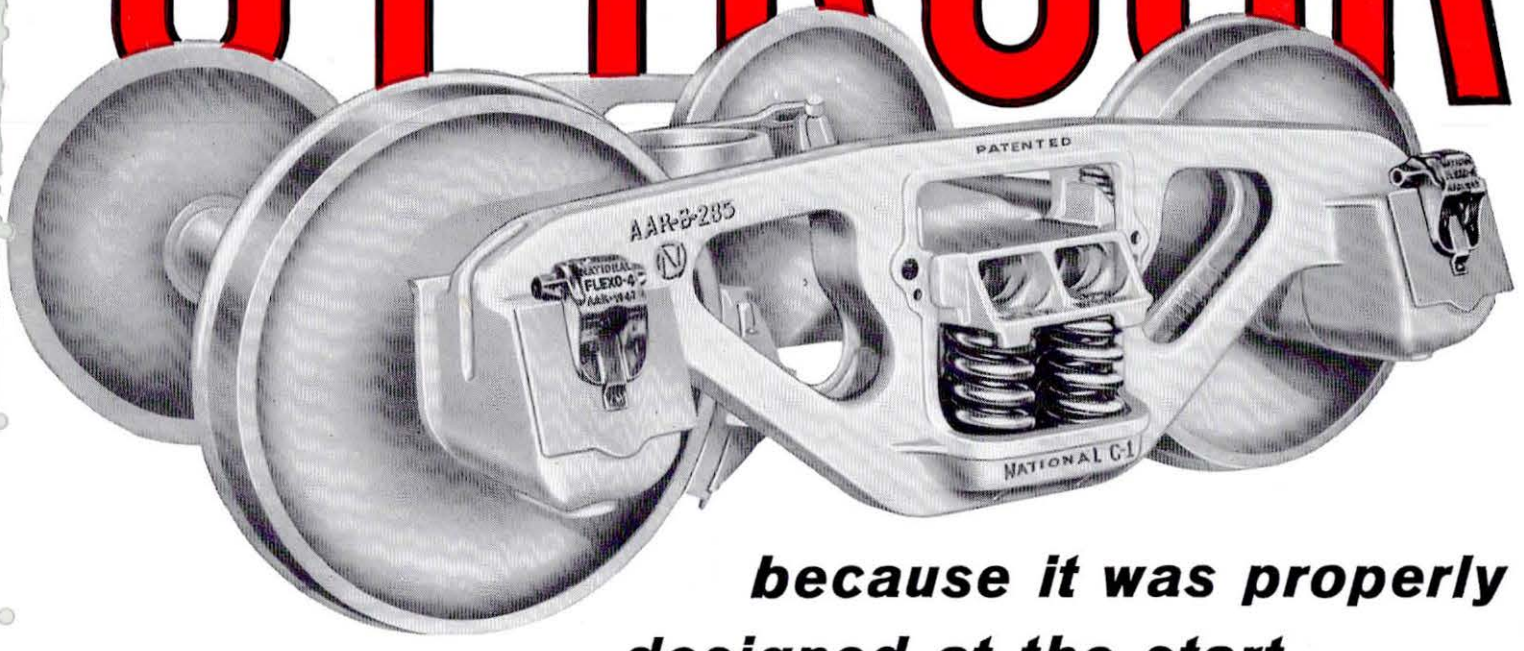


wear plates
.00064% replacement

C-1 TRUCK



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CONCRETE-TIE TESTS HAILED (*Continued from page 10*)

signed to give the optimum performance in track.

The first step in this new move of the concrete tie to challenge the supremacy of the wood tie took place in 1957 when Mr. Magee and his associates set out to design a prestressed concrete tie. Primary responsibility for conducting the design work was assigned to E. J. Ruble, research engineer-structures, largely because of his extensive experience with prestressed concrete.

Several designs of ties were created and tested. As the work proceeded, new design features were introduced. One of these was developed to minimize the possibility the tie would become center-bound in track, a condition that increases track-maintenance costs. This feature consists of a V or wedge-shape applied to the underside of the tie for a distance of 3 ft at the middle. The theory, as explained by Mr. Magee, is that the center section would tend to work down into the ballast and thereby relieve the tendency to become center-bound. Sample ties with this feature were placed in a typical ballasted roadbed in the laboratory and subjected to a pulsating load equivalent to a diesel axle load. The results, relates Mr. Magee, "may be indicative that the wedge-shaped center section is effective in controlling a center-bound condition."

Wider Spacing

Another design criterion that came into the picture during the course of the design work was based on the reasoning that a 30-in. spacing for the concrete tie in track would help reduce the overall cost. Such a spacing would mean that two concrete ties would take the place of three wood ties, which are spaced about 20 in. apart. Calculations indicated that the resulting increase in stresses in the rail would amount only to about 10% in the heavier rail sections, still well within safe working stresses.

Tie "E" incorporates these features. It is 8 ft 6 in. long, 12 in. wide at the base and 9 in. at the top. The underside at the ends has a concave shape in order to hold the ballast and enhance the stability of the tie. The tie is prestressed by four 7/16-in. uncoated 7-wire strands made by John A. Roebling's Sons Div. of CF&I. The concrete mix, containing high early strength Portland cement, Florida sand, granite coarse aggregate having a maximum size of ¾ in., an air-entraining agent and water, is designed to produce a minimum compressive strength of 6000 psi at 28 days.

Fittings for the concrete tie, also the result of extensive study and laboratory tests, include tie plates 5 in. wide, which are separated from the concrete by a treated plywood or polyethylene plastic pad to absorb impact and provide electrical insulation. At each tie plate there is a specially designed, heavy-duty clip on each side of the rail, which is clamped against the top of the rail base by a ¾-in. heat treated bolt inserted thread down into a recessed pocket in the underside of the tie. Insulation is provided by a flanged rubber sleeve inserted through the clip and the plate before the bolt is applied. A double coil spring washer completes the assembly.

This design means that the nuts for bolts must be inserted in the recesses before the ties are placed in track. Two different arrangements are used to lock the nuts against turning when the bolts are inserted. In one of these the nuts are spot-welded in position in a channel placed in a recess in the bottom of the tie. In the other a tapered wedge nut is used. This nut is set in a preformed wedge-shaped hole half way through the tie and is designed to resist bolt tension through wedging action against the sides of the hole.

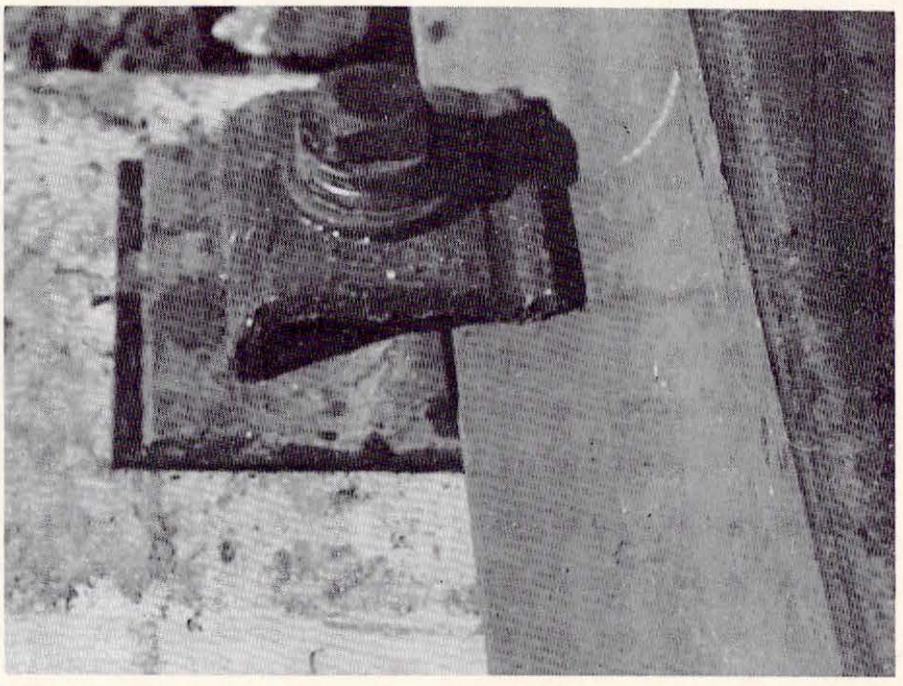
While the design work on the concrete tie was still in its early stages the project came to the attention of Mr. Cone, the youthful president (he's now 31) of the Florida Prestressed Concrete Company, Tampa. For some time Mr. Cone had been nourishing the conviction that the prestressed concrete tie, properly designed and manufactured on a mass-production basis, would be economically feasible. On learning of the work being done at the AAR laboratory in Chicago he offered to collaborate in providing sample ties for laboratory testing and in furnishing the ties necessary for quarter-mile service tests on the ACL and the SAL. Shortly thereafter the American Concrete Crosstie Corporation was formed by Mr. Cone and his associates to manufacture and sell concrete ties.

Since the tie-casting machine had not been completed the ties for the two test installations were manufactured by the long-bed process. Sufficient ties to provide 150 for the ACL installation and the entire 600 needed for the SAL test became available late in February. Because these ties weigh about 540 lb each there was naturally some question regarding whether they could be handled successfully by available track machines. To a large extent this question was answered by the experience obtained in making the test installations.

For example, the concrete ties for the SAL test were hauled to the site on flat cars and unloaded by a Burro crane working from a flat car placed between two cars of ties. A special tong designed to grip the tie at the middle was used. No problems were reported in unloading the ties.

The long rails at this location had been laid late last year. For five standard rail lengths at each end these rails were held by compression clips at every

(*Continued on page 16*)



BOLT in clip assembly extends through tie to nut in recess on underside. This view was taken on ACL.

CONCRETE-TIE TESTS HAILED *(Continued from page 15)*

tie. In between, the clips were used on every other tie. The plan for installing the concrete ties was to insert alternate ties throughout the length of the long rails, removing only those wood ties that were found to be in the way of the concrete ties. In this phase any of the remaining wood ties without clips were provided with them. The remainder of the concrete ties were inserted in a similar follow-up operation.

The work of removing the old ties and inserting the concrete ties was done by a gang consisting of 30-odd men using these principal items of equipment:

Two Raco power wrenches to remove the nuts from the compression clips.

A Fairmont spike puller to pull the spikes.

A Fairmont Tie Remover to push out the wood ties.

A Fairmont Tiebed Scarifier preparing the beds to receive the concrete ties.

A Nordberg Gandy for pulling the concrete ties into position in the track.

Two Raco power wrenches running down the bolts in the concrete ties.

A Jackson Multiple Tamper compacting the ballast under the new ties.

Before being inserted the bolts were dipped in NO-OX-ID. The reasoning is that this coating will result in the bolt holes being completely filled, thereby shutting out water and protecting the bolts from corrosion. Spot checks of the bolt tension were made with a torque wrench.

No Serious Problems

Those in charge of the work reported no serious problems were encountered in handling or inserting the concrete ties. Emphasizing that the work was done under traffic J. R. Traphoner, SAL division engineer at Tampa, stated that 200 concrete ties were inserted the first day with the gang having occupancy of the track about half the working day.

Several days after installation of the concrete ties had been completed the test section was raised 1½ in., the ties were tamped out of face and the track was lined. Equipment used in this work included a Nordberg Power Jack, with a Nordberg Trak-Surfacer, to make the raise. A Jackson four-tool outfit was used to catch off the tie at the point of raise. The tamping was done with a Matisa tamper and the track was lined with an RMC LineMaster working in conjunction with a Nordberg Line Indicator. As the final operation, the ballast was equalized by a Kershaw Ballast Regulator.

Will alterations be required in present machines to adapt them to the handling of concrete ties? "Only minor ones," answers W. C. McCormick, general roadmaster of the Seaboard. He noted, for example, that it was necessary to adjust the tamping bars on the Matisa tamper to accommodate them to the greater width of the concrete tie. He would also make changes in the hook used by the Gandy when pulling ties into the track, one purpose being to

Watching Washington *with Walter Taft*

• **EXTENSION** of the trainload-rate idea to truck-competitive situations has been cleared by the ICC. The Commission's Division 3 has found lawful a 40-car rate published by the Chicago & North Western, Milwaukee, Rock Island and Illinois Central for tank-car shipments of soybean oil from Cedar Rapids, Iowa, and Clinton to Hammond, Ind.

MULTIPLE-CAR RATES previously approved by the Commission were designed to meet competition of water carriers, "whose unit of transportation is not limited to single carloads." That's how the Commission put it in the precedent-setting decision which first authorized trainload rates—its 1939 report in the Molasses Case.

THE PRESENT DECISION (in No. 32466) approves the extension because Division 3 found "no valid reason for distinguishing between a large volume moved at one time and a large volume moved by the continuous operation of a fleet of private trucks with limited unit loading capacity."

THE TRAFFIC has been moving partly by rail and partly in leased tank trucks. It was when the shipper considered acquiring his own trucks that the railroads published the multiple-car rate nine months ago. It is 28 cents per 100 lb, and cost evidence indicated that it covers the railroads' fully-distributed costs.

THE RATE was published first by the North Western by "independent action" after the Western Trunk Line Committee had disapproved. In its presentation to the Commission, North Western relied exclusively on the proposition that 28 cents was what would meet private truck costs and thus hold the business. It did not undertake to defend the relationship to single-car rates. No single-car shipper complained.

• **ANOTHER RATE-FREEDOM GAIN** is the Commission's decision to approve a water-competitive railroad rate on magnesium metal and alloys from Velasco, Tex., to East St. Louis, Ill. The approved rate ($9.94 per net ton) is less than 6% above rates of barge-line operators who protested that this does not permit them to maintain a sufficient differential.

THE DECISION was a third Commission go-around in the case (I&S No. 6768). The first report, by Division 2, found the rate lawful. On reconsideration, the division reversed itself. The Commission then reopened the case for a further hearing out of which came the present favorable report.

CONGRESSIONAL REPORTS which preceded passage of the 1958 Transportation Act's rate-freedom provision were cited by the Commission as it cleared the rate. It recalled that these reports expressed approval of its 1945 decision in the New Automobiles Case, which "recognized that 'within reasonable limits the public is entitled to reduced rates brought by competition.' "

prevent chipping of the concrete.

Six of the concrete ties installed in the SAL test had strain gauges affixed to their undersides before being inserted in track. These will be used later to determine the static and dynamic bending moments at different points in the ties under slow-moving and fast-moving trains. They will also make it possible to measure the distribution of load with the 30-in. spacing. The plan is to make the strain-gauge readings later this Spring.

In both of the service tests different types of fittings are being tried out. Wedge nuts and channel-type headlocks for the bolts were installed at both locations. Polyethylene pads were installed under all the plates at the ACL installation, but in the SAL test various types of treated plywood pads are being tested along with the plastic pads.

What about the economics of the concrete tie? Using the tie-casting machine now being perfected Mr. Cone estimates that Tie "E" can be made available at a cost of $9.00 each. On this basis it is estimated that the ties and fastenings for one mile of welded track will cost about $2,000 more with the prestressed concrete ties than with conventional wood-tie construction. This means that proponents of the concrete tie are counting on reduced maintenance costs and longer service life to make a favorable comparison with the wood tie. The test installations will be observed carefully for evidence of such savings.

As Mr. Magee puts it: "The extent to which individual railroads will use prestressed concrete ties will depend upon the performance shown in the ACL and SAL test installations and the relative economics as applied to their own conditions." He is "inclined to believe that out-of-face replacement of wood ties, salvaging those ties that can be used, will be more favored than so-called spot removals of one or two ties per rail length as wood ties have to be renewed."

Among railroad men there is speculation over the possibility of replacing wood with the concrete ties on a piecemeal basis with the objective of completing the conversion in a particular section in about 20 years. Consideration is also being given the feasibility of installing concrete ties in yards at a spacing of 40 in. Based on calculations of the resulting stresses in the rail and the pressure on the subgrade, assuming a 6-in. depth of ballast under the ties, Mr. Ruble feels this would be a practicable arrangement.

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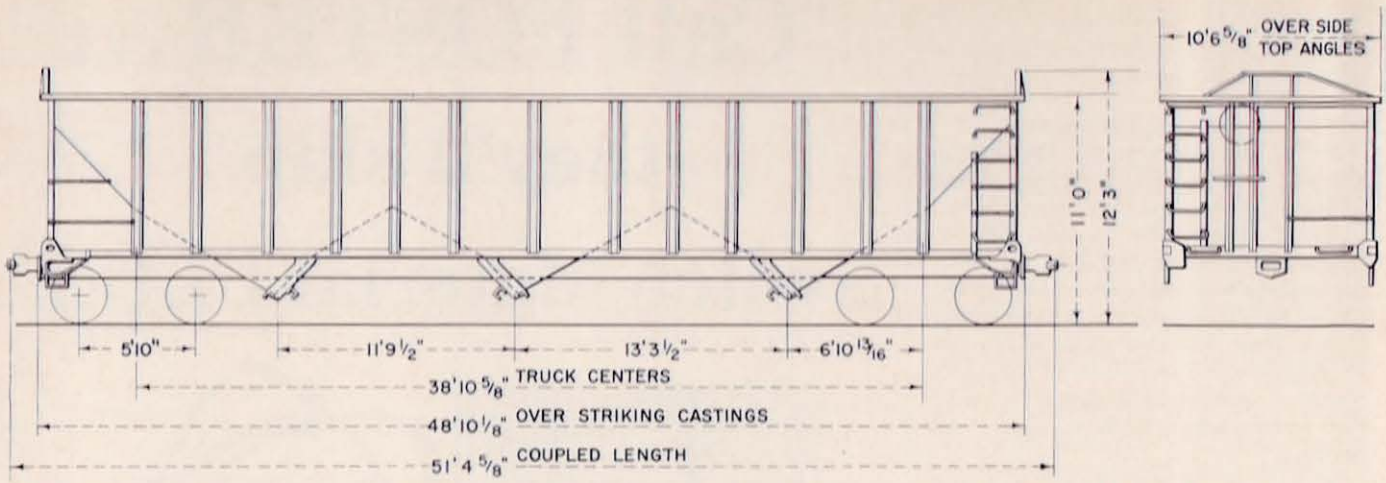


CUBIC CAPACITY of new car will be 3,011 cu ft—up 408 cu ft from 70-ton car. Inside length will be 47 ft 8⅝ in.

N&W To Build 85-Ton Hoppers

A new 85-ton hopper car promises to play an increasingly prominent role in coal transportation on the Norfolk & Western. The road has just announced plans to build 1,000 of these cars beginning next August (RA, March 7, page 35). Design of the car, new not only to the N&W but to all U.S. roads, is already completed; material is now being ordered. Cars are to be built at the N&W's Roanoke, Va., shop, at a cost of $12,000,000.

Changes in the coal consumption picture have led to this larger car. At present, 44% of the N&W's 68,000-car open-top fleet are 50-ton cars and 56% are 70-ton cars. First 70-ton cars went into service on the N&W in 1922. While retail coal dealers generally favor a smaller car, movement of coal to electric utilities, steel mills and for trans-shipment at lake and ocean ports steadily increases in volume and in importance in the overall fuel picture. Here it is an advantage to both customer and railroad to have the largest carrying units which are economically justified.

The N&W began its design for a new hopper on this premise. Use of six-wheel trucks to achieve high capacity makes the first cost of such a car too high. The road then went to a four-wheel truck with 6½-x-12-in. journals which permits an on-the-rail load of 251,000 lb for a four-axle car. With this as a starting point, the N&W began to develop a car which could carry 90 tons of coal. It was then determined that not all the N&W connections would accept a car with a gross weight of 251,000 lb; but that a 240,000 lb gross weight would be generally acceptable. Beginning with this 240,000 lb figure, the capacity of the largest possible car which could be developed proved to be 85 tons.

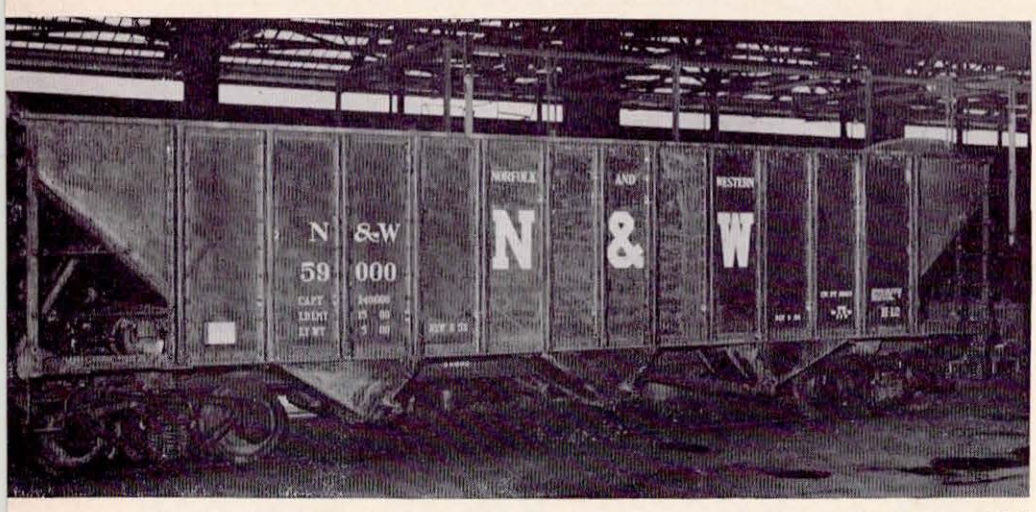
Officers of the road examined the proposed 85-ton design and determined the following advantages:

- Lower first cost per ton of capacity.
- Lower light weight per ton of capacity.
- Shorter length per ton of capacity.
- Reductions in periodic maintenance costs such as repacking, brake cleaning and repainting.
- Savings resulting from reduction in number of units to be switched by mine runs and subsequently handled in yards enroute.
- Savings resulting from reduction in clerical work incident to movement records and revenue accounting.
- Reduction in number of units to be dumped at ports, permitting larger tonnages to be handled in a given time.
- Reduction in air brake problems because fewer components and connections are involved in movement of a given tonnage.

To be balanced against these were some other factors. The cars would not be as universally acceptable in interchange as would 70-ton units. Some retail coal dealers would not be interested in the bigger cars. Restrictions on acceptance of such cars would result in additional switching to confine the high-capacity cars to certain shippers, routes, and consignees. And 85-ton cars would also reduce per diem receipts.

After consideration of its advantages, the Norfolk & Western proceeded with

(*Continued on page 59*)



DESIGN OF NEW 85-TON HOPPER has been based on this 70-ton car which was completed in 1958. To date, N&W has built only one of these 70 ton models.

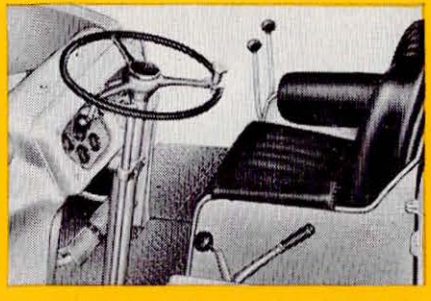
BRIEF SPECIFICATIONS

Bucket capacity, 2 cu. yd.; bucket reach, 50¾ in. (@ 7 ft. dump height); over-all width (bucket), 93½ in.; wheelbase, 88 in.; speeds, forward (4), 0-24 MPH . . . reverse (4), 0-30 MPH; shipping weight, with diesel engine, 20,780 lb. — with gasoline engine, 20,440 lb.

HIGH LIFT, extra-long reach and safety! Note how bucket lift arms are completely in front of operator's area. This gives him new freedom of movement and greater all-round visibility. Other safety features: wide steps for safe and easy access from either side. Plus wide fenders that provide a handy engine checking platform as well as protection for operator from rocks and mud.

NOW! The No. 944

. . . the Cat wheel-type Traxcavator
. . . the first of a New Wheel Loader Line



DESIGNED FOR ACTION, controls provide instant, finger-tip shifting . . . a full range of work and travel speeds with reverse speeds 25% faster than forward speeds. Travel Range gives 2-wheel drive for roading . . . Work Range automatically puts power to all 4 wheels. Other action features: conveniently located machine and bucket controls . . . forward-reverse lever on the steering column . . . both bucket control levers with kick-out devices. Lift control releases at dumping height — tilt control positions bucket for digging.

DESIGNED FOR PRECISE CONTROL, the No. 944 brake system is outstanding. The left brake neutralizes the transmission as it stops the machine to provide superior loading action. The right brake leaves the transmission engaged for full control when creeping, etc.

VERSATILE IS THE WORD for the Cat No. 944 Traxcavator, which is offered with a full line of attachments and accessories to multiply its usefulness to you on any job. Available are forks, cab (shown here) and special buckets, including the exclusive side dump bucket.

Here's the first of a completely new line of equipment . . . the Cat No. 944 . . . rated at 2 cu. yd. capacity . . . that will soon include the No. 922 (1¼ cu. yd. bucket) and the No. 966 (2¾ cu. yd. bucket).

Watch for these new machines with the bold new design . . . they're ready to bring new standards to wheel loader operation. Take a look at the big new features that make this the easiest and fastest wheel loader to operate. Every feature is designed for *efficient work.* Plenty of horsepower . . . finger-tip steering . . . smooth, fast bucket action . . . outstanding operator comfort and safety.

Choose from two great new engines . . . the compact 4-cylinder Cat D330 Diesel Engine, turbocharged for maximum efficiency . . . or the 6-cylinder gasoline engine. Both are 105* HP units. Whatever your requirements, there's a No. 944 powered to meet your needs. Get the complete facts on the No. 944. See your Caterpillar Dealer the week of March 14. See for yourself how the new design pays off on your loader jobs!

Caterpillar Tractor Co., General Offices, Peoria, Ill., U. S. A.

*For comparative purposes, the maximum rating of the Caterpillar D330 Diesel Engine used in the No. 944 is 135 horsepower.

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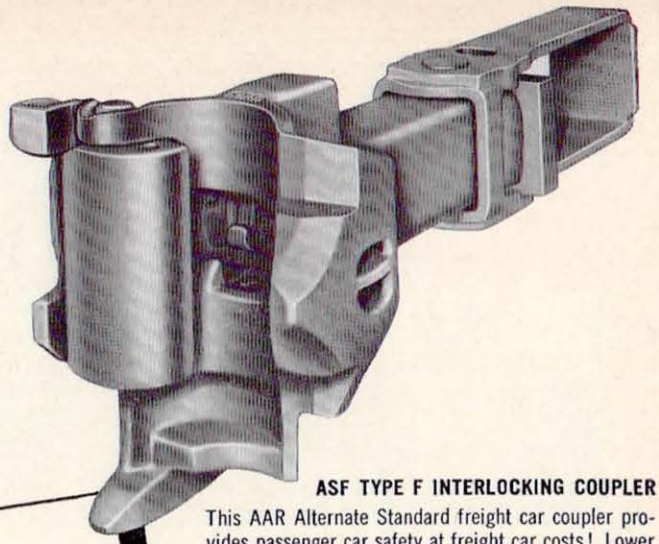
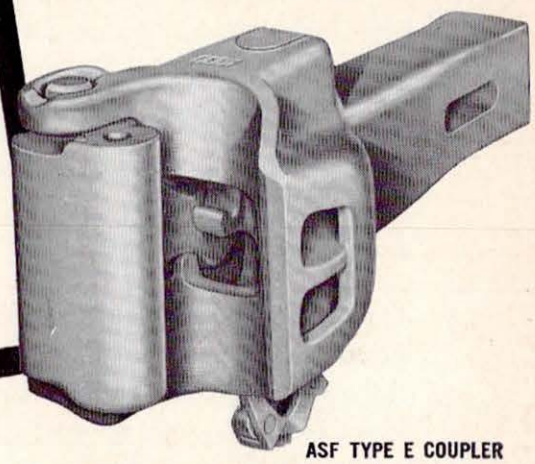
Only ASF makes all 4 AAR-APPROVED coupler designs

ASF Couplers are the safest links that man ever put between railroad cars. Quality construction and the unmatched ASF experience in Research and Development have made them that way. On your cars, make sure that you're getting the finest in long-lasting, trouble-free coupler performance. When you specify ASF, you are.



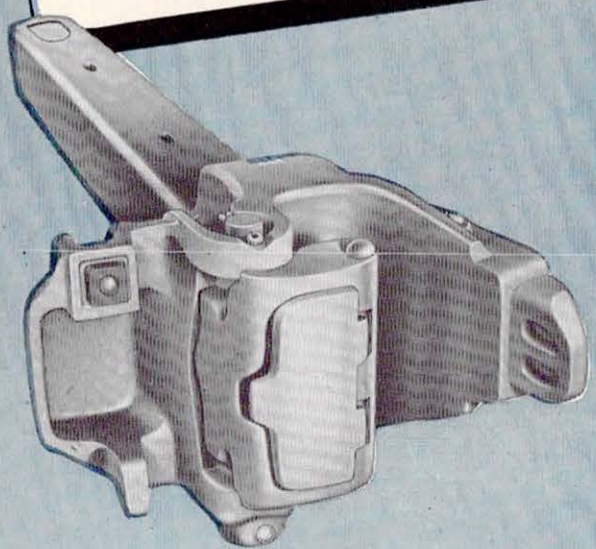
ASF TYPE F INTERLOCKING COUPLER

This AAR Alternate Standard freight car coupler provides passenger car safety at freight car costs! Lower maintenance costs add up to another "plus." Vertical movement between ASF mated F Couplers is virtually nonexistent. This, combined with a more than 50% reduction in free contour slack, means less wear and shock stress . . . longer knuckle and contour life.



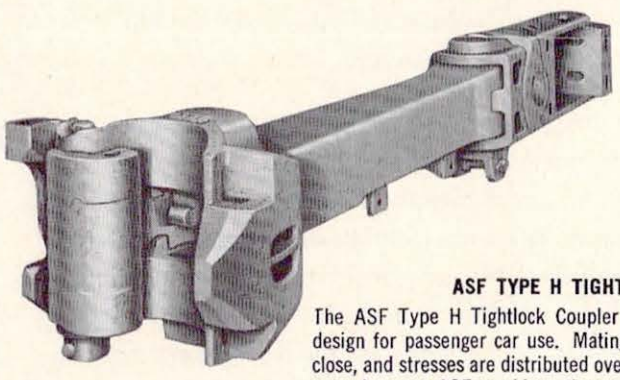
ASF TYPE E COUPLER

This is the unmistakable standard for freight car service . . . now safer than ever, because of steady refinement that has kept pace with heavier drawbar pull. Accidental partings due to simultaneous longitudinal shock and vertical bounce are prevented by means of the Articulated Rotary Locklift. ASF Type E knuckle and lock are made of high-tensile steel to give a yield strength of 300,000 pounds, minimum.



ASF CONTROLLED SLACK COUPLER

Maximum safety and operational smoothness—combined with minimum cost—make this the ideal coupler for new passenger cars. ASF's Controlled Slack Coupler solves the problems of objectionable coupler noise and the shocks of free slack. It interlocks positively, both vertically and horizontally . . . and mates with all AAR Couplers, as well as older MCB Couplers.



ASF TYPE H TIGHTLOCK COUPLER

The ASF Type H Tightlock Coupler is a higher-cost design for passenger car use. Mating is unbelievably close, and stresses are distributed over a larger surface area, because ASF machines the components of this coupler to precision tolerances.

ASF Couplers

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Complete AREA

F. R. WOOLFORD
President

American Railway
Engineering Association

The three-day meeting of the American Railway Engineering Association starts March 14 at the Sherman Hotel, Chicago.

AREA members attending the annual convention will find themselves getting up a half hour earlier and having dinner a half hour later than at previous meetings.

It's all because of the numerous special features included in the program along with the reports of the standing committees. Because of the added features, morning sessions are scheduled to start a half hour earlier than in the past — 9:00 on the first day (Monday, March 14) instead of 9:30, and 8:30 on the second and third days instead of 9:00. Additional time is gained by extending the afternoon sessions a half hour, to 5:30, on the first and second days. On Wednesday, the final day, the meeting will adjourn at noon, as usual.

The program reflects a hope expressed by President F. R. Woolford of the association and chief engineer of the Western Pacific. That hope is "to make our convention program the most stimulating, thought-provoking and educational that it is possible to make it." This means bringing "to the members the maximum amount of information possible within the over-all time limitation of our convention." Therefore, a record number of special features — addresses, movies, symposiums and panel discussions— has been scheduled.

Special features indicated thus ●

MONDAY MORNING, MARCH 14
9:00 to 12:00—Grand Ballroom

Presidential Address—F. R. Woolford, chief engineer, Western Pacific

Reports of Executive Secretary Neal D. Howard and Treasurer A. B. Hillman

● **Symposium on standardization**

"Standardization—A tool to greater industrial efficiency," by Norman L. Mochel, manager, Metallurgical Engineering, and consultant, Westinghouse Electric.

"Standardization—Can effect huge savings for the railroads," by J. S. Fair, general purchasing agent, PRR.

"Standardization—As the trackwork manufacturers see it," by J. P. Kleinkort, manager, Railroad Products Division, American Brake Shoe Company.

"Standardization—From the standpoint of the engineering and maintenance of way departments," by R. H. Beeder, chief engineer system, Atchison, Topeka & Santa Fe.

● **Address—"The responsibilities of maintenance officers to their managements," by D. W. Brosnan, vice president - operations, Southern System.**

MONDAY AFTERNOON
1:30 to 5:30—Grand Ballroom

Reports of Committees
Clearances (1:30)

● **Motion picture — "Freight car clearance tests on DL&W RR," with commentary by Randon Ferguson, electrical engineer, Research Staff, AAR**

● **Address—"The engineering profession comes of age," by H. A. Mosher, president, National Society of Professional Engineers**

● **Address—"Oil pipe lines on railroad rights of way" (illustrated), by W. T. Eskew, Jr., assistant general manager, Southern Pacific Pipe Lines, Inc.**

Contract Forms (2:55)

● **Address—"The relationship between the attorney and the engineer on the railroad," by Henry W. Oppenheimer, general attorney, Chesapeake & Ohio**

Engineering and Valuation Records (3:25)

● **Symposium—"Depreciation and its impact on budgets and maintenance expenditures," L. W. Howard, land and tax commissioner, Chicago & Western Indiana—Belt Railway of Chicago, moderator**
"From the viewpoint of the valuation engineer"—Morton Friedman, retired chief valuation engineer, New York Central System
"From the viewpoint of the engineer maintenance of way"—J. Bert Byars, assistant to chief engineer, Denver & Rio Grande Western
"From the viewpoint of the chief engineer"—E. W. Smith, assistant to chief engineer, St. Louis-San Francisco

Yards and Terminals (4:03)

Railway Age invites you to

Program—1960 Meeting

- Motion picture—The P&LE's new retarder yard near Youngstown, Ohio — "The New Gateway," with commentary by E. G. Brisbin, chief engineer, Pittsburgh & Lake Erie.

Economics of Railway Location and Operation (4:40)

- Address — "Operating innovations — present and future" (illustrated), by M. I. Dunn, vice president-operations, Chesapeake & Ohio

Waterways and Harbors (5:18)

TUESDAY MORNING 8:30 to 11:55
George Bernard Shaw Room

Reports of Committees

Water, Oil and Sanitation Services (8:30)

Cooperative Relations with Universities (8:50)

- Address—"The career development of engineers on seven railroads," by V. J. Roggeveen, associate professor of civil engineering and transportation, Stanford University

Wood Bridges and Trestles (9:25)

- Address—"Fire-retardant treatments on the Santa Fe" (illustrated), by L. C. Collister, manager, tie and timber treating department, system, AT&SF.

Masonry (10:00)

Symposium on prestressed concrete. (To be presented with report of the Committee on Impact and Bridge Stresses)

Impact and Bridge Stresses (10:15)

- Symposium—"Application of prestressed concrete to railway structures" (illustrated), E. J. Ruble, research engineer structures, AAR, moderator
  Research—Dr. C. E. Ekberg, Jr., professor and head, Department of Civil Engineering, Iowa State U.
  Material—L. P. Nicholson, railway representative, Portland Cement Association
  Design—W. R. Wilson, assistant bridge engineer system, Atchison, Topeka & Santa Fe
  Construction—P. S. Gillan, general manager, Florida Prestressed Concrete Company

Iron and Steel Structures (11:05)

- Address—"Construction and loading of half-scale test bridge at Northwestern University" (illustrated), by Gerald C. Ward, civil engineering administrative director, Truss Bridge Research Project
- Address—"Truss bridge research program and current results" (illustrated), by John F. Ely, acting director, Truss Bridge Research Project

Waterproofing (11:45)

- **Association Luncheon—Grand Ballroom**
  12 noon, Tuesday

Announcement of results of election of officers
Address by Frederic B. Whitman, president, Western Pacific, on "The challenge for progress"

TUESDAY AFTERNOON 2:15 to 5:30
George Bernard Shaw Room

Reports of Committees

Buildings (2:15)

- Address—"Control joints in masonry block construction" (illustrated), by W. C. Panarese, railway representative, Portland Cement Association

Highways (2:45)

- Address—"Federal-aid highways and the railroads —a status report," by Bertram D. Tallamy, federal highway administrator, Bureau of Public Roads

Wood Preservation (3:30)

Ties (3:45)

Maintenance of Way Work Equipment (4:05)

- Panel discussion — "Training of work equipment operators and mechanics"—R. K. Johnson, superintendent of work equipment and reclamation, Chesapeake & Ohio, moderator

Economics of Railway Labor (4:50)

- Motion picture—"Mechanized bridge and building gangs," with commentary by R. L. Fox, process engineer structures, Southern System

WEDNESDAY MORNING 8:30 to 12:00
Grand Ballroom

Reports of Committees

Roadway and Ballast (8:30)

- Address—"Highlights of asphalt treatment of ballast" (illustrated), by G. L. Hinueber, engineering laboratory manager, AAR

Rail (9:15)

- Address — "Wheel load, wheel diameter and rail damage" (illustrated), by C. J. Code, assistant chief engineer-staff, Pennsylvania

Special Committee on Continuous Welded Rail (9:50)

- Motion picture—"The Rio Grande's big push"
- Motion picture—"Field loading welded rail on the Santa Fe"

Track (10:30)

- Panel Discussion — "Standardization of track turnouts," S. H. Poore, assistant engineer, Chesapeake & Ohio, moderator
  Panel Members:
  M. C. Bitner, manager—methods and cost control, Pennsylvania
  F. W. Creedle, chief engineer, Trackwork Products, Railroad Products Division, American Brake Shoe Company
  T. R. Klingel, chief engineer, Minneapolis, St. Paul & Sault Ste. Marie
  M. J. Zeeman, engineer of track design, Atchison, Topeka & Santa Fe

Closing Business (11:30)

Installation of officers
Adjournment

WEDNESDAY AFTERNOON 1:30

Post-convention inspection of AAR Research Center

its "Breakfast Bar" each morning in Parlor O

EXPERIENCE...

Here's the experience of a typical railroad

BETTER PERFORMANCE

Average Brake-Shoe Mileage

BUDD — 90,000

TREAD BRAKE — 4,600

Average Wheel Mileage

BUDD — 110,000

TREAD BRAKE — 59,800

Average Truck Mileage between Overhauls

BUDD — 900,000

TREAD BRAKE — 450,000

AT LOWER COST

Number of Brake-Shoe changes per car/year

BUDD — 3.73

TREAD BRAKE — 72.96

Cost of Brake-Shoe changes per car/year

BUDD — $515

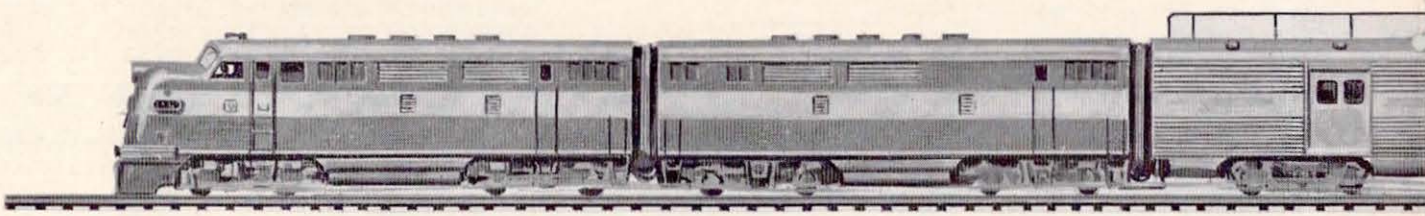
STANDARD C.I. — $3490

LONG C.I. — $4640

Total Number of Major Parts

BUDD — 112

TREAD BRAKE — 208



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Your savings in brake-shoe and wheel costs can pay for converting your Passenger Cars to Budd Disc Brakes in as little as 2 years. You'll get up to 20 times longer brake-shoe life and doubled wheel life. You'll get twice as much truck mileage between overhauls—and the overhauls themselves will cost you half as much. In addition to these dollars-and-cents advantages, Budd Passenger Car Disc Brakes give you greater braking efficiency, smoother, faster stops. They eliminate thermal cracked wheels. They contribute to safer operation and noticeably increased passenger comfort. These results have been proved during 20 years service on main line passenger cars on most of the country's leading railroads, including some of the toughest terrain in every kind of weather. Budd will be glad to prepare a report particular to your service savings and return on investment, including complete specifications and engineering drawings for conversion to Budd Passenger Car Disc Brakes.

- **Brake-shoe mileage up 10 to 20 times**
- **Wheel mileage doubled**
- **Truck mileage between overhauls doubled**
- **Braking noise eliminated**
- **Smoother stops—no chatter**
- **Faster emergency stops**
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- **Eliminated slack adjustment**
- **Off-tread braking is the only guarantee against thermal cracked wheels**

ROLOKRON®

. . . Most effective protection against slid flat wheels

Rolokron is an automatic, electric control device that detects wheel slip and releases brake cylinder pressure. As soon as wheels resume normal rotation, brakes are automatically reapplied. The result: better braking efficiency, elimination of flat spots and thermal damage. Rolokron is readily included in disc brake conversion jobs. Write for full details.

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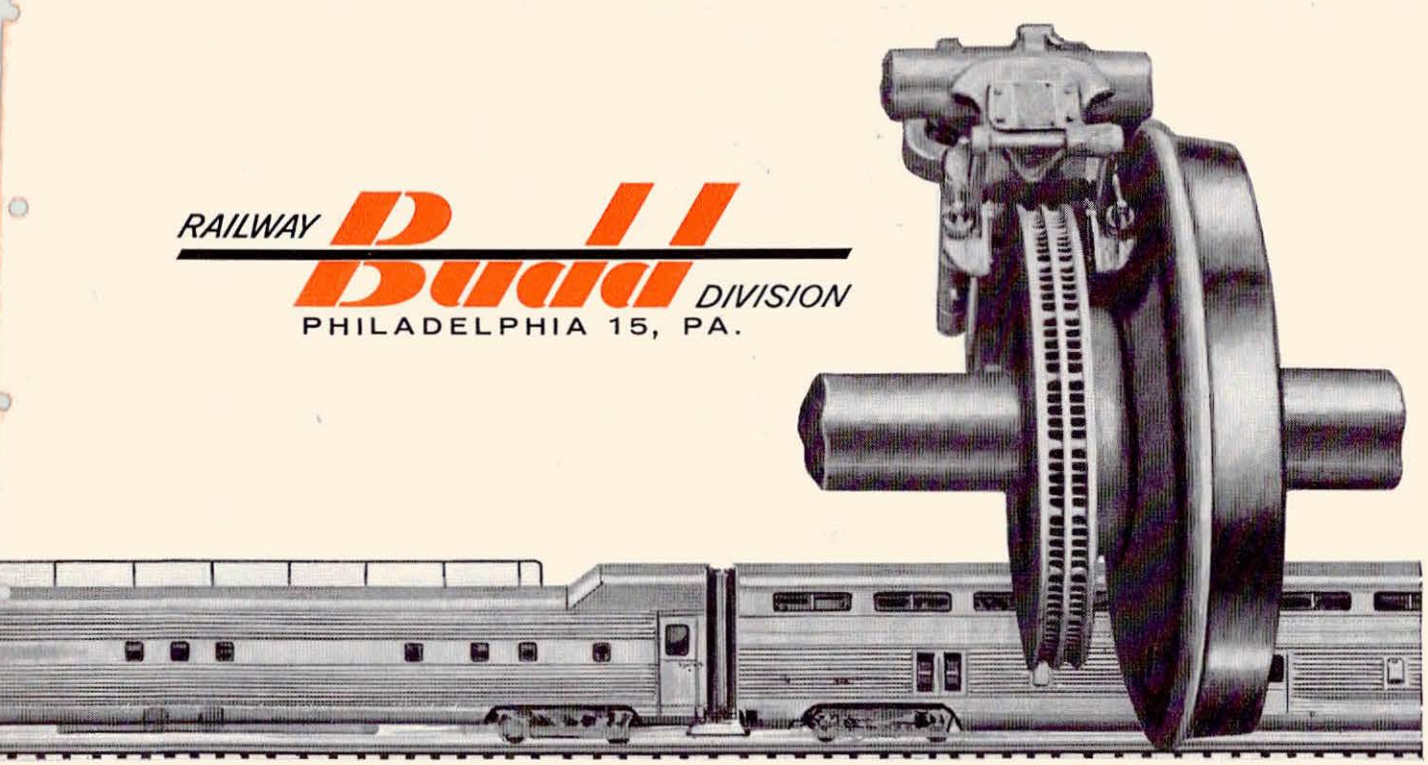

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the trains that team with trucks

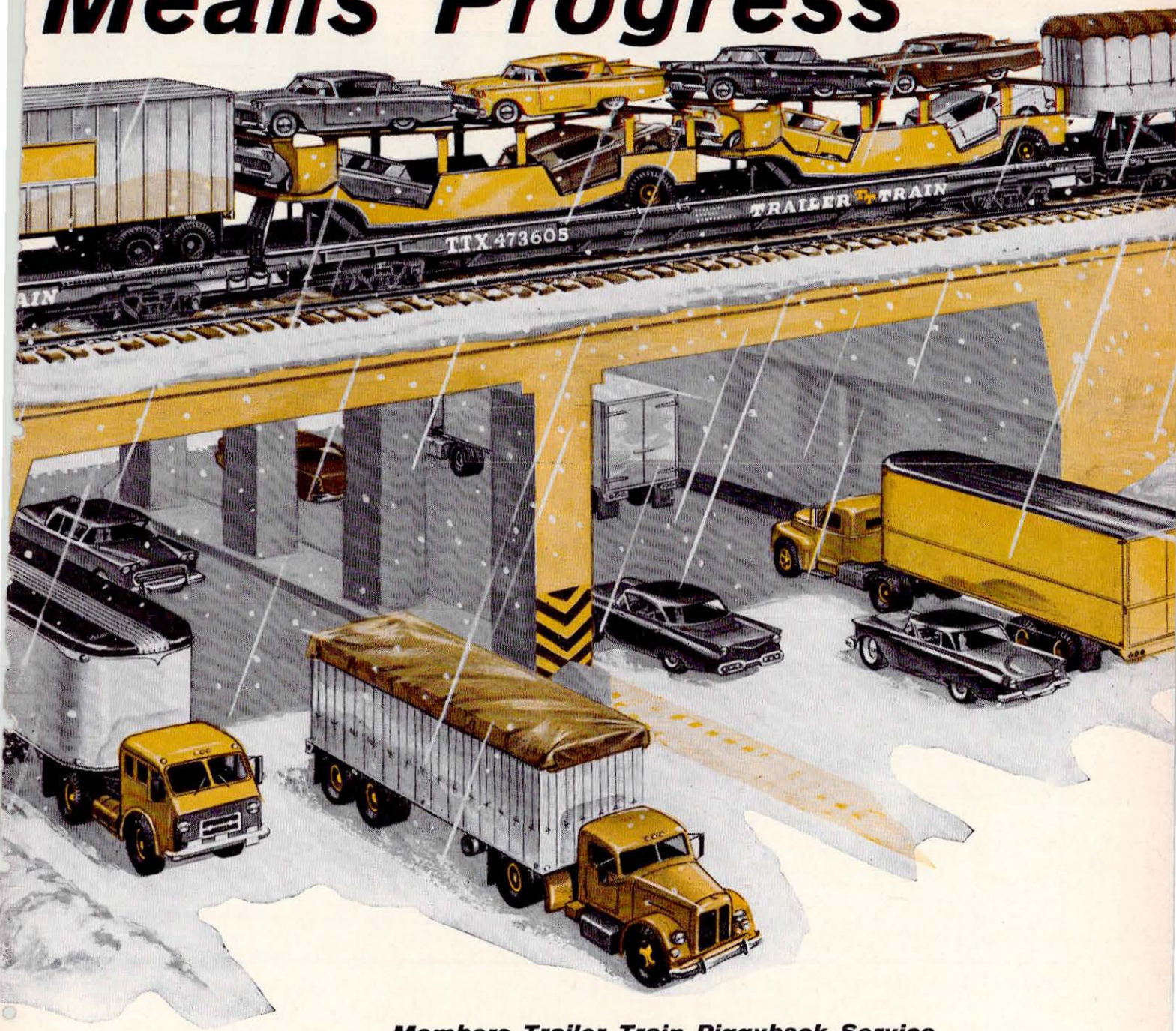
Thanks to Trailer Train, many railroads are now winning new praise and profits in piggyback service. For at their disposal is the most modern equipment ever pooled to do a job!

Trailer Train's new 85-foot cars are equipped expressly for piggyback. They're capable of carrying two 40-foot trailers with a combined load of 130,000 pounds at speeds above 60 miles per hour.

Trailer Train owner-members can obtain these cars as they need them to meet their varying traffic demands. In this way they are not hindered with too little—or burdened with too much. Other advantages: Rates are standardized; charges are held to a minimum; cars idle for more than five days are free of all charges.

Although equipment is standardized for efficient interchange, Trailer Train cars constantly incorporate the most advanced features of active piggyback research.

Means Progress



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ALL FOR ONE—AND ONE FOR ALL!

TRAILER TT TRAIN

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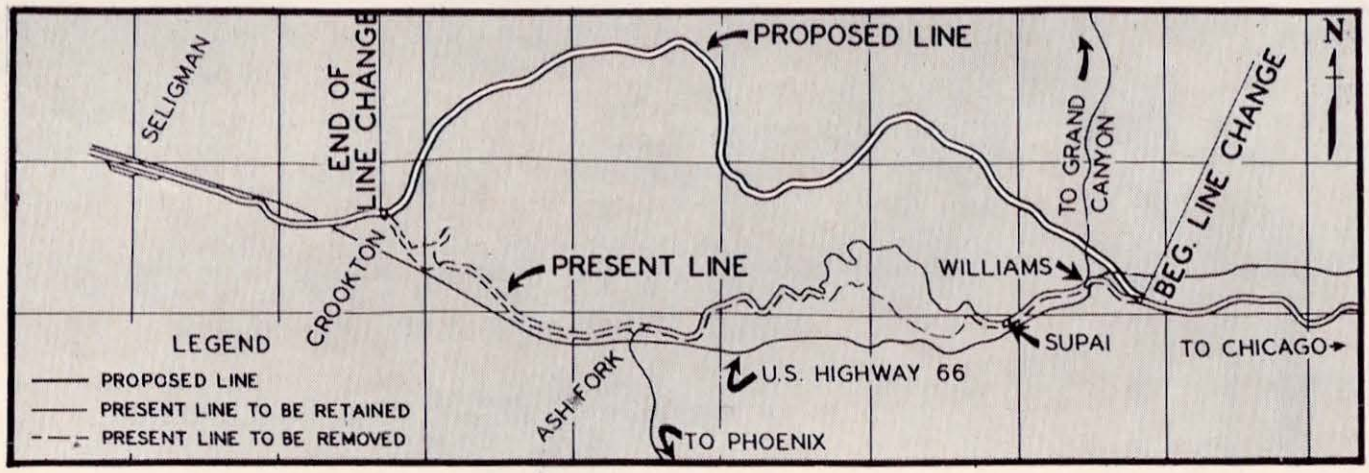
BROAD SWATH is cut through volcanic region of malpais, clay, caliche, loose and fused cinders, limestone and sandstone. Santa Fe found test holes not too reliable because of heterogeneous nature of geological formations in the area. Abrupt changes, resulting from numerous eruptions, created these conditions.

Big Machines Pace Santa Fe . . .



NEW 44-MILE LINE, Williams, Ariz., to Crockton, will be double-track, signaled for two-way traffic.

. . . Line Change in Arizona

► **The Story at a Glance: Santa Fe is now constructing a line change 44-miles long from Williams, Ariz., to Crookton. It will remove the steepest ruling grade on the road's transcontinental line east of Barstow, Calif. In addition to improving train-running time, the new route will bring about several other benefits.**

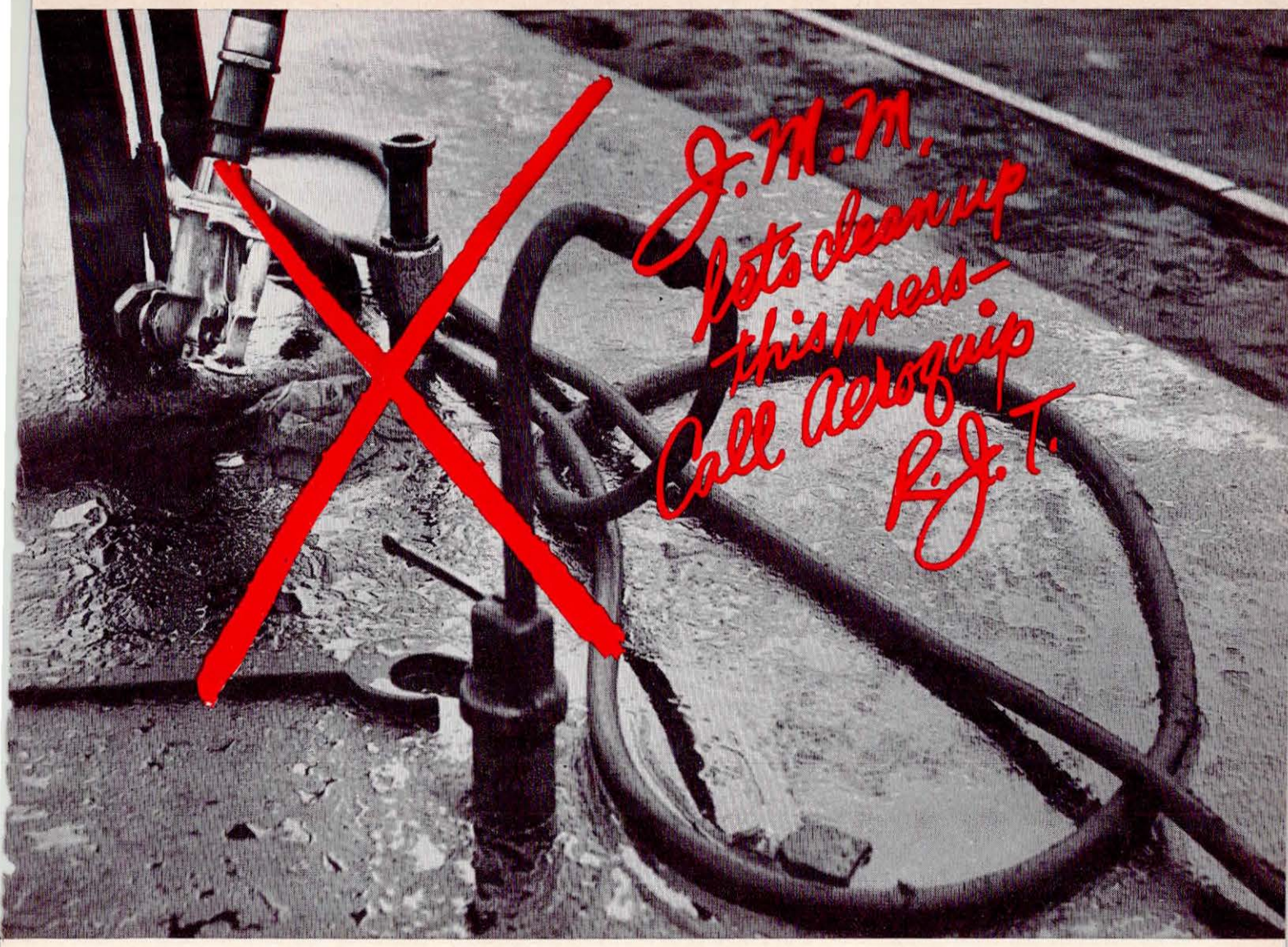
Grading and bridge construction work on the Santa Fe's new double-track line between Williams, Ariz., and Crookton is about 50% complete.

The new line will have a maximum grade of 1% and maximum curvature of 1 deg. It will be signaled for traffic reversal. The present mains, except the existing eastward main between Williams and Ash Fork (see map), will be retired. The latter is needed to continue service on the road's line to Phoenix.

An interesting facet of the Williams-Crookton project is that the locating engineer, when establishing the existing route in 1880, was aware of the existence of the alternate route now being developed. In fact, earlier notes on location reconnaissance show that the wagon road which served the survey camps followed in general the route selected for the current line change.

But the locating engineer who laid out the original line was working under a different set of conditions. For one thing, water was important for steam locomotives in those days. The route he selected was better situated in that respect. At that time, too, Prescott was the territorial capital and the preponderance of the region's business was centered there. Hence, it was important the line should come as close as possible to

(*Continued on page 30*)



Fuel Spillage is Hazardous and Costly

THE FUEL STAND—POTENTIAL SOURCE OF FIRE, INJURY, POLLUTION

The picture above is an example of "the accident that's just about to happen." Nozzle spillage and tank overflow can create dangerous conditions at the fuel stand.

Sloppy fueling conditions aggravate the ever-present danger of fire, invite personnel injuries, and increase the possibility of liability resulting from community water and drain pollution.

Spillage also accounts for a direct loss of approximately 1% of the railroads' diesel fuel. The bill for this last year was 3 million dollars. The trickles of wasted oil added up to a fuel volume sufficient to fill 3000 tank cars.

In the past, the only answer to these problems has been expensive separators and concrete fueling platforms. A better answer is to stop fuel leaks at the source.

The Aeroquip Automatic Fueling Unit eliminates spillage, with its accompanying waste, hazards and needless damage. Fuel tanks are filled at high flow rate. The automatic shut-off valve eliminates hand-topping. The unit saves time, manpower and money. It installs easily in less than two hours. Maintenance by railroad personnel is simple. Write today for full details.

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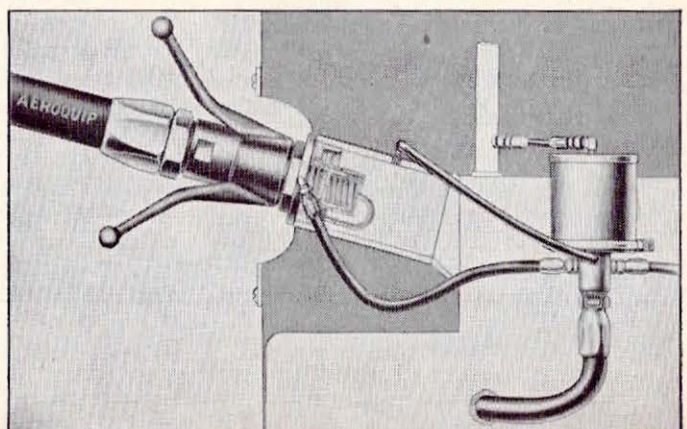

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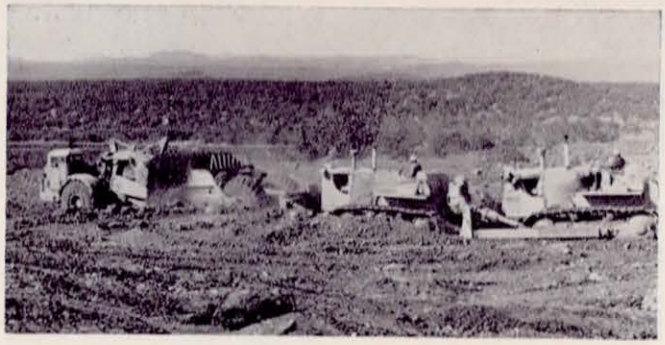
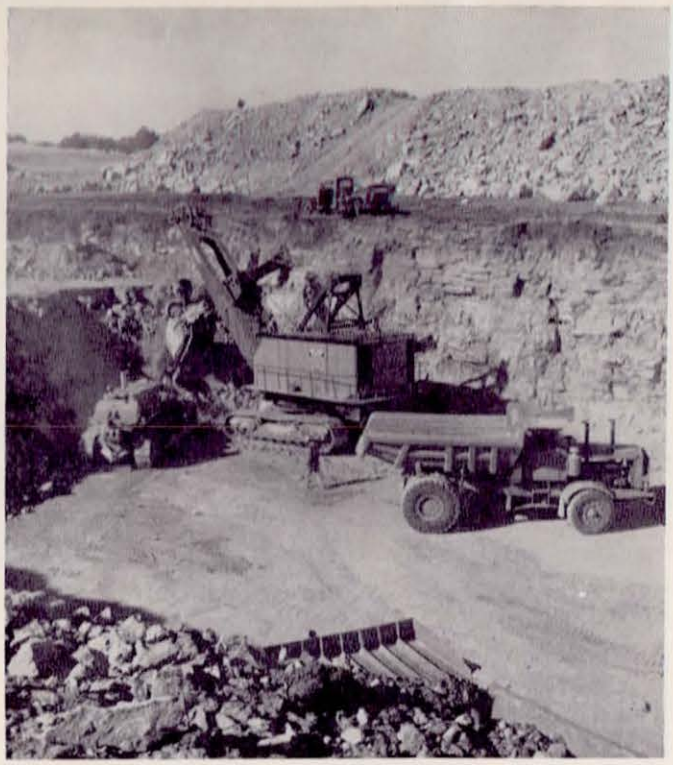
CLEARING RIGHT OF WAY, Cat D8 crawler tractors work far in advance of other operations.



HAUL AND ACCESS ROAD is built by Cat DW21-No. 470 scraper, tandem pushed by D8s.



UNRIPPABLE MATERIAL is pried out by 4-yd Bucyrus-Erie 88B and loaded into rear-dump trucks.

MACHINES PACE SANTA FE LINE CHANGE *(Continued from page 28)*

Prescott which, even so, is some distance south of the route chosen.

A third important factor involved in selection of the route was the geology of the region, known as the San Francisco Mountain volcanic field. Along with sandstone, limestone, loose and fused volcanic cinders, the formations include malpais. Malpais is a basaltic igneous rock or lava which is hard to blast because of its fractured and honeycombed nature and its varying hardness. Black powder, widely used for blasting at that time, was not too effective in breaking up this formation. Because more malpais would be encountered on the route now selected for the line change, the locating engineer preferred the route of the existing line.

In building the existing double-track line, he used grades as steep as 2%, which are not excessive for mountainous terrain, and curves up to 10 deg. He also built 10 miles of the westward main on a bench following Johnson Canyon and through a short tunnel on a 10-deg curve.

Because of these physical characteristics, the existing Williams-Crookton line presented several objectionable features. Westward freight trains were restricted to speeds of from 15 to 20 mph on 19 miles of the line. Canyon-wall construction for 10 miles in Johnson Canyon, with its 10-deg curves and need for retaining walls for supporting the track, resulted in high maintenance costs. The tunnel, though short, presented clearances which were too restrictive for present-day loads, requiring that many westward trains be operated against the current of traffic.

Steepest Ruling Grade

The long 1.8% grade is the steepest ruling grade for freight trains east of Barstow, Calif. It was impracticable for the railroad to conform with its practice of laying continuous welded rails because of excessive curvature, and motorization of its maintenance forces would be less effective.

One of the considerations which focused the road's attention upon the Williams-Crookton segment was the fact that the segment was faced with major maintenance expenditures. Between these points, the rail on both main tracks had to be renewed within the next five years. Some bridge renewals also were required. Most of the signals were of the AC type installed in 1913, and signal improvements, including traffic reversal, were needed.

In addition, restrictive clearances of the Johnson Canyon tunnel made daylighting of this bore necessary for modern loads. Also, many of the retaining walls along Johnson Canyon would have to be extended and repaired.

Several advantages made a line change look attractive. For one thing, the Williams - Crookton project will measurably improve train running time between these points. This factor alone will do much to improve the road's competitive position. In view of the parade of large trucks on U.S. Highway 66, which parallels the railroad for many miles, the Santa Fe is well aware of the importance of trimming train schedules in its bid for freight business.

The traffic-reversal signal system will allow the road to handle trains of all speeds without delay and interference. It will also preclude the need to hold a freight train at Seligman, 10 miles west of Crookton, for a passenger train to depart. It will, in addition, permit passenger trains to be run without delay at a maximum speed of 90 mph past the expedited-freight trains moving at a maximum speed of 60 mph. The signal system will provide for automatic train stop.

The ruling grade will be reduced

(Continued on page 35)

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One man does the job in 3 simple steps

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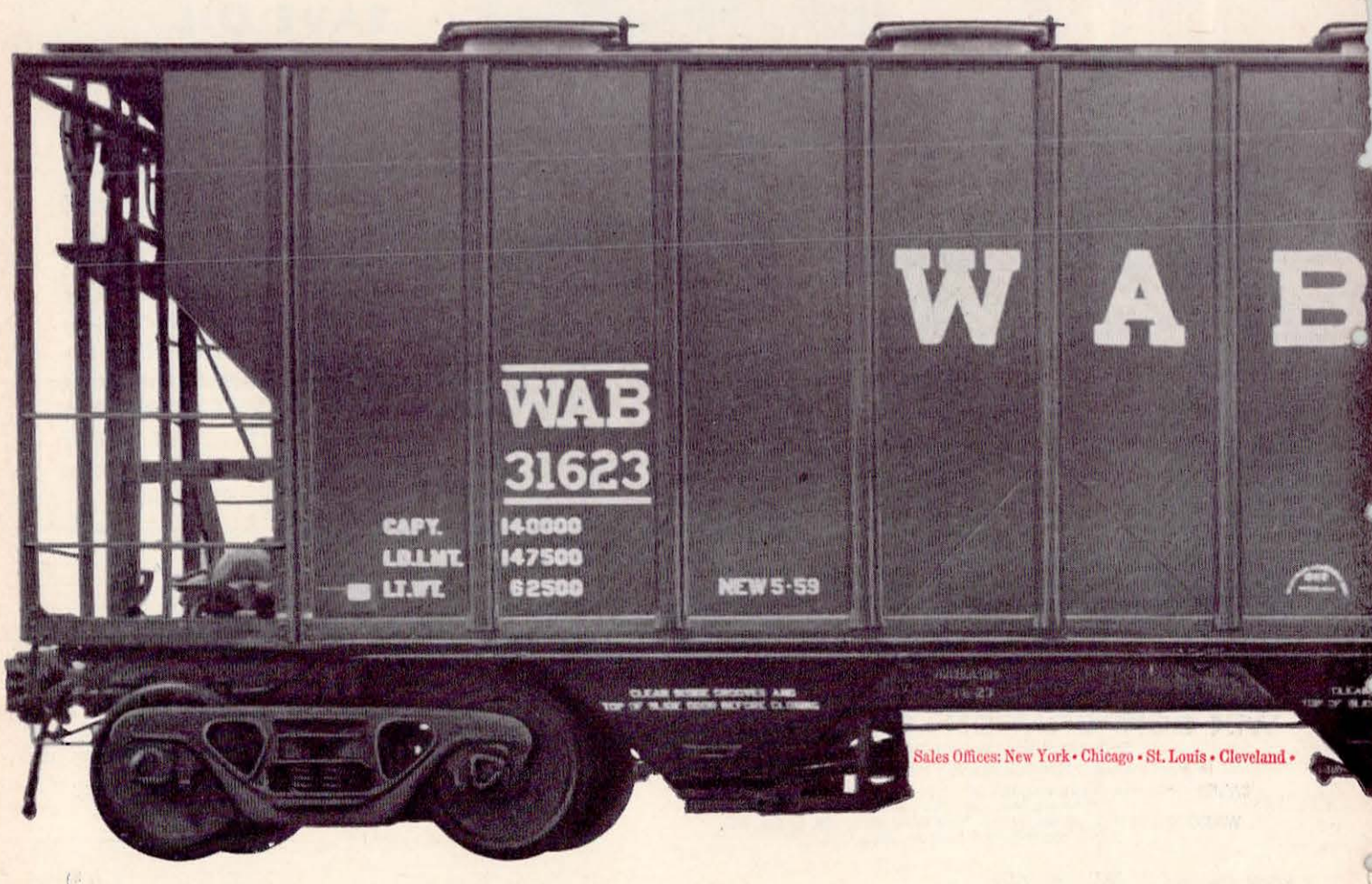

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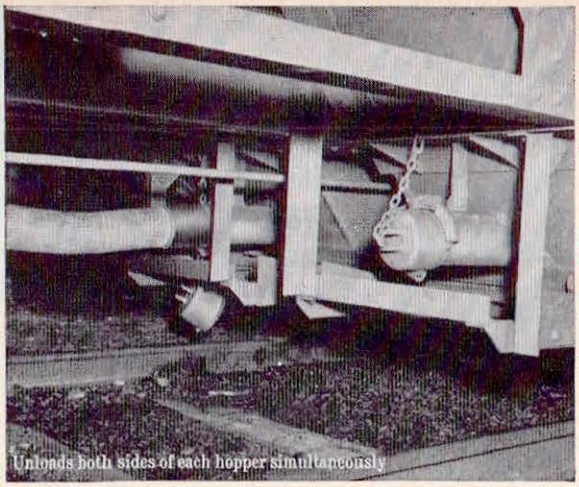
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operate; pneumatic outlets adaptable to any size vacuum conveyor system; operates with pneumatic or gravity unloading interchangeably. ACF "SHIP-O-MATIC" Covered Hopper Cars are available in 4 sizes: 2,000, 2,900, 3,200 and 3,500 cubic feet. Contact any ACF sales office for information on price, design details, delivery.

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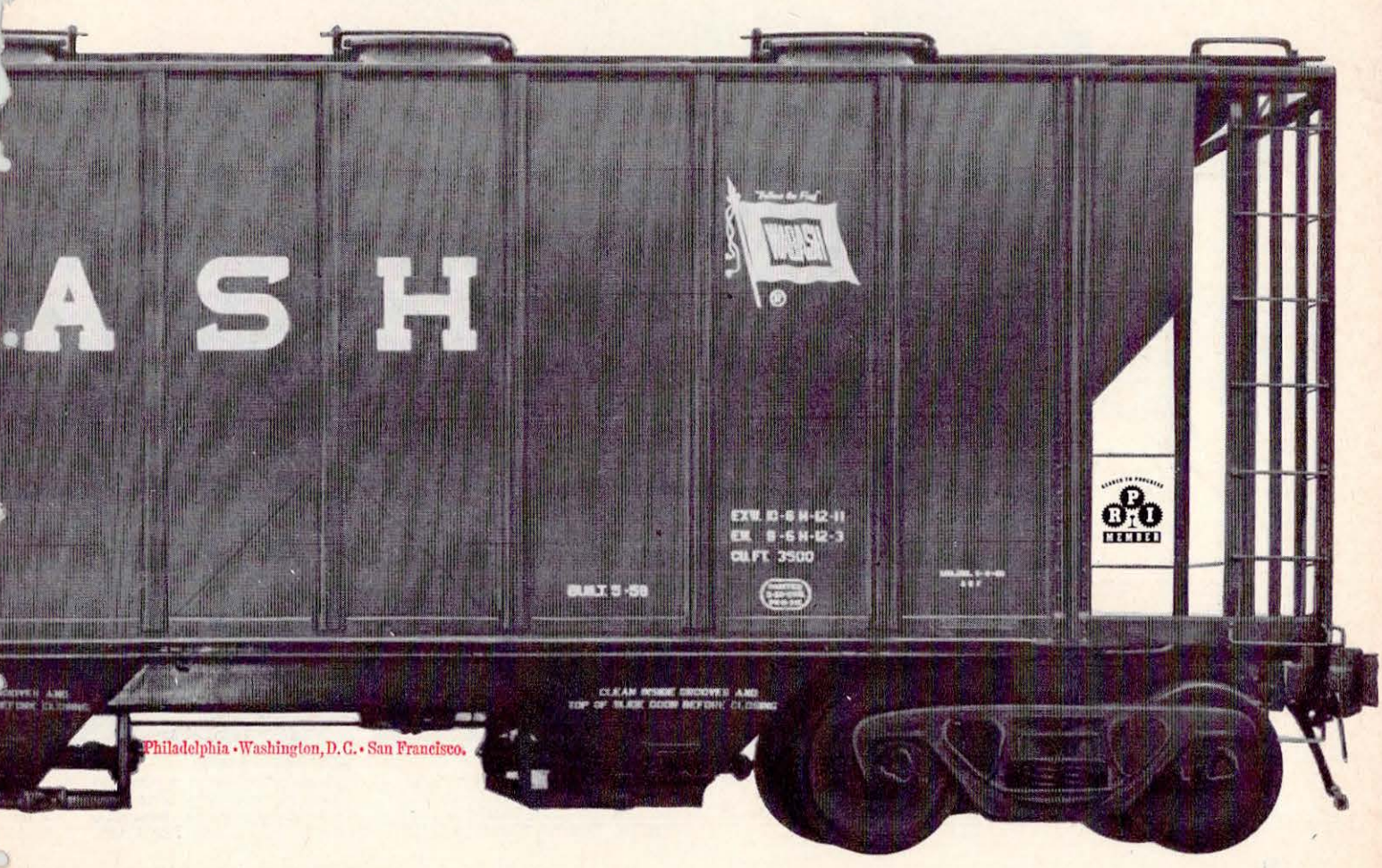
MAN UNLOADING HOPPER CAR"



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extends life of wheel flanges and rails

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new model MC MECO lubricator has fewer working parts, more positive action!

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And with the new Model MC MECO Lubricator you get design advancements for more positive action, uniform grease distribution, easy-to-get-at adjustment control, and simple to maintain construction.

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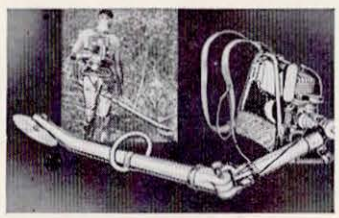
RAILWAY EXCHANGE BUILDING · CHICAGO 4, ILLINOIS

MACK REVERSIBLE SWITCH POINT PROTECTOR
Prolongs the life of switch points about 4 times; then is reversed and again extends the switch point life for another similar period.



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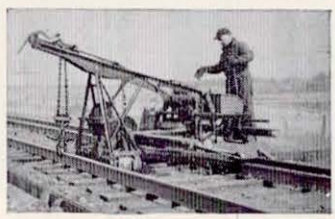


MECO POWER RAIL LAYER
Reduces labor cost to minimum in laying Standard Rails, Long Rails, Continuous Welded Rail. Requires a machine crew of only 3 or 4 men.

R-769R

MACHINES PACE SANTA FE LINE CHANGE (*Continued from page 30*)

from 1.8 to 1%. Johnson Canyon tunnel, with its clearance limitations, will be eliminated. Maximum curvature will be reduced from 10 deg to 1 deg. Also, the total central angle of curvature will be cut from 4,614 deg. to 1,451 deg. Such a reduction will considerably reduce wear and tear on the track. It will also permit the road to lay, and enjoy the benefits of, 136-lb continuous welded rail.

Already about two months ahead of schedule, it is anticipated the grading will be completed by next October. Track laying will start about June 1. Signal work is expected to progress so the new line can be placed in operation early in 1961.

The location of the new route was made from reconnaissance on the ground and from photogrammetric topographic maps. A small-scale model of the country through which the old and new routes lie was made to demonstrate the advantages of the new route and as an aid to following the progress of the work. Bridge types and sizes were determined and test borings were made at all points where structures were to be built, and also at intervening points.

Construction problems encountered today are about the same as those met by the early-day construction forces. More malpais rock is encountered on the new route, however. Even with modern explosives, care must be exercised in placing the charges in this formation. If placed in a crack strata of malpais, or below in loose cinders, much or all the effective force of the explosives may be lost.

Another grading difficulty comes from the fact that the geological formations are heterogeneous. Changes occur so abruptly that test holes are not fully reliable in estimating the quantities of various classifications.

30% *Is in Malpais*

In general, about 30% of the excavation is in malpais formation and 64% in sandstone and limestone. The remainder is in volcanic cinders and clay. Over 4 million tons of volcanic lava and 8.5 million tons of sandstone and limestone must be blasted.

The road has established a soils laboratory in the field for testing and rejecting all materials considered unsatisfactory for roadbed construction. Where Cataract creek crosses the new route, it was necessary to build the embankment with a core of impervious material, then fill out the remainder of the section with rock. At another location, the soils experts required excavation of a large amount of soft materials down to firm soil before permitting construction of the embankment. Fills, constructed in 6-in. layers, are compacted by tamping, rolling and vibrating before the next course is applied. The highest fill will be 117 ft, the deepest cut 110 ft.

Only two railroad bridges will be constructed on the new route. Each will be a steel deck-girder structure, one carrying the tracks over U.S. Highway 66 and the other over a road to Williams airport. All other openings will be either concrete-box culverts or corrugated metal pipes. About 65 metal pipes, ranging from 36 in. to 120 in. in diameter, are involved. Twenty-five concrete boxes, varying from a single 9-ft by 9-ft opening to a triple 16-ft by 14-ft opening, are required.

One other bridge is necessary—for carrying three high-pressure gas lines of the El Paso Natural Gas Company 60 ft above the tracks where the line is laid through a deep cut.

Through rock cuts, the Santa Fe is building the top of subgrade 42 ft wide. This width includes the normal space for side ditches, which have a top width of 9½ ft each. Through earth cuts the top of subgrade is being built 58 ft wide, which permits a top width of 17½ ft for each side ditch. On embankments, the subgrade is built 36 ft wide.

Huge Force Mustered for Grading Work

With more than seven million cubic yards of material to move, the contractor, Morrison-Knudsen Company, Inc., assembled a powerful force to speed work on the Santa Fe's Williams-Crookton line change. Approximately 475 men and more than 150 pieces of equipment are progressing westward from Williams to Crookton.

Cutting a broad swath through such materials as malpais, sandstone, limestone, clay and caliche, this force is using a wide variety of earth-moving techniques. For speed and economy, as much material as possible is ripped and dozed by crawler tractors, then push-loaded into scrapers. When the material encountered becomes unrippable, drills, powder, shovels and trucks are brought in.

Yet, despite rocky barriers and the difficulty of working in winter at relatively high altitudes (up to 6,950 ft), M-K's men, led by Guy Reid, project manager, have moved some four million yards in 5½ months. As of February 15, they were ahead of schedule. The crews are working two nine-hour shifts, six days a week.

At that time, M-K was working its deepest cut to date, approximately 115 ft, requiring the removal of some 900,000 cu yd of material. Crews also were beginning their deepest fill, again about 115 ft, at Double-A canyon where an estimated 465,000 cu yd would have to be brought in. Generally speaking, the earthmoving project breaks down into the following phases:

- Clearing of right of way is assigned to Cat D8 crawler tractors. Stripping of topsoil and clay, caliche and conglomerate cover is accomplished by Cat DW21-No. 470 or D8-No. 463 tractor scrapers, depending upon the haul distance. Deepest cut by the DW-21s was 33 ft, during which four such units, tandem pushed by D8s, moved 67,000 cu yd of tight clay and caliche in 81 hours.

- Other D8s, equipped with Ateco or Caterpillar rippers, rip and doze rock or pushload scrapers. When unrippable material is encountered, Bucyrus-Erie 71B and 88B excavators are brought in to load Euclid 63TD and 65TD end-dump trucks.

- Material too hard for the excavators is drilled with Ingersoll-Rand and Gardner-Denver equipment, blasted and loaded into trucks by B-E and Northwest shovels.

- Helping to speed movement of material is the constant construction and maintenance of haul and access roads, more than 30 miles of which had been built as of mid-February. Suitable material for this purpose has been found in nearby volcanic cinder piles, which is hauled and spread by DW21s, then graded by No. 12 motor graders. Under the pounding of heavily laden vehicles, the cinders quickly form a tight, sturdy roadbed.

PROOF...after PROOF

BIRD

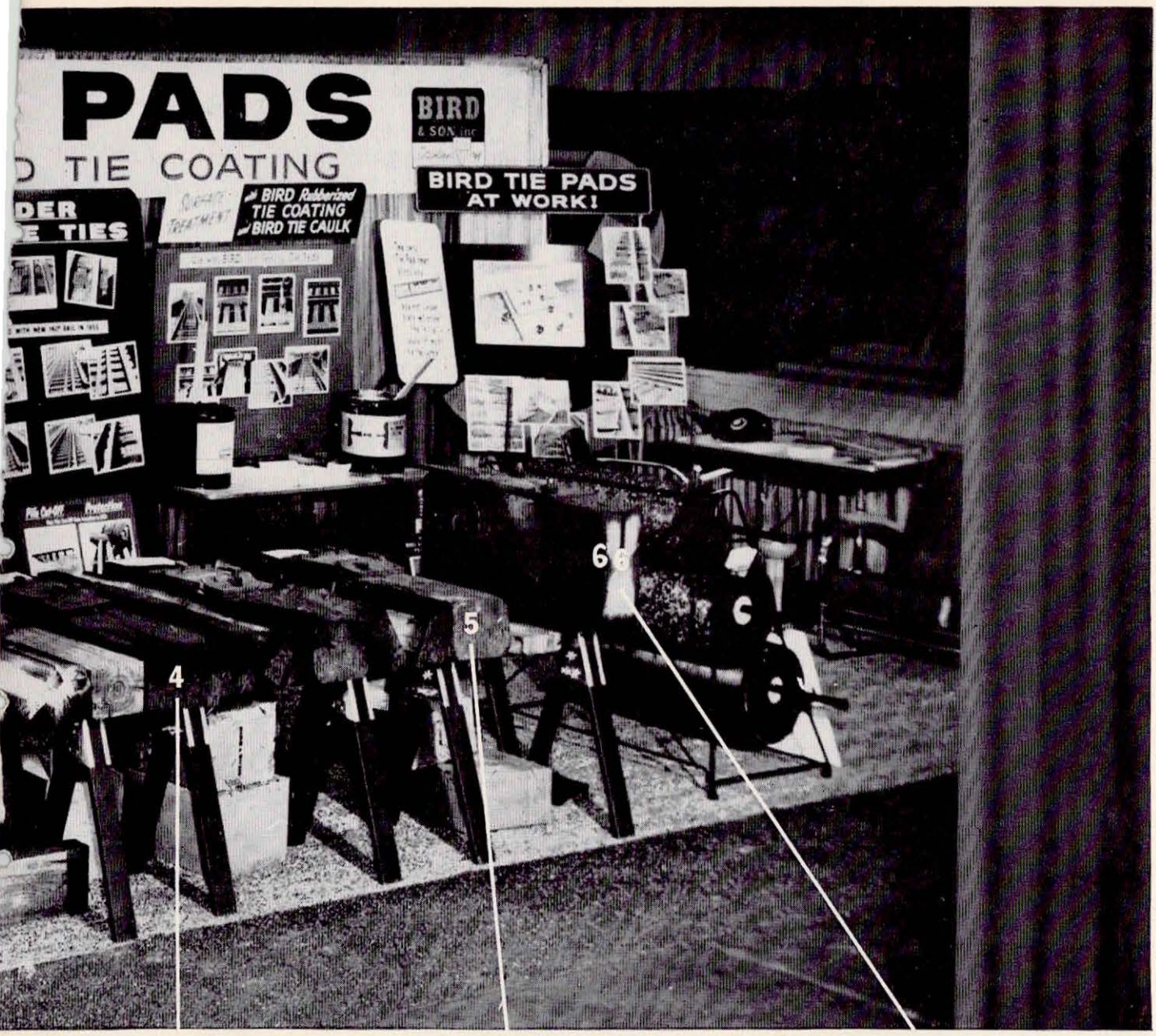
1. DRY WOOD
This 60-year-old tie, removed from a covered railroad bridge, is as sound today as when it was installed. Bird Self-Sealing Tie Pads give the same protection against moisture and abrasive materials.

2. SMALLER TIE PLATES
These are 7″ x 10″ tie plates with Bird Self-Sealing Tie Pads. Pads were installed under existing plates in preference to buying larger tie plates.

3. BLOW-SAND TERRITORY
After 9 years of Bird Tie Pad protection in critical desert territory, moisture or sand has not penetrated the effective and durable seal of Bird Self-Sealing Tie Pads.

.after PROOF

SELF-SEALING TIE PADS *CUT* TRACK MAINTENANCE COSTS



4. TANGENT TRACK
This tie, removed from track for exhibition after 12 years' protection with a 12″ Bird Self-Sealing Tie Pad, shows no destructive effects of either moisture or abrasion.

5. CURVES
Bird Tie Pads were installed on a 4° curve in 1947. There is no plate cutting after 13 years.

6. BRIDGE TIES
This expensive 8″ x 16″ bridge tie on a 4° curve has been protected for 12 years with Bird Self-Sealing Tie Pads.

Note: In every one of the above actual case histories, there has been absolutely no contact between the tie plate and tie because of the rugged construction of the Bird Tie Pad. No deterioration of the underplate or spike-hole wood has taken place due to the effective and durable seal of the pad to the tie. Write for proof to Dep't HRA

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SANTA FE, permanent slow sign

BALTIMORE & OHIO, station sign

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SOUTHERN, stop sign

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ERIE, resume speed sign

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DULUTH, MESABI & IRON RANGE, flanger sign

MONON, yard limit sign

MINNEAPOLIS & ST. LOUIS, whistle sign

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ROCK ISLAND, station sign

DENVER & RIO GRANDE WESTERN, flanger sign

MILWAUKEE ROAD, switch target

ILLINOIS CENTRAL, stop sign

WESTERN MARYLAND, speed limit

GREAT NORTHERN, mile sign

FRISCO, distance signal

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ssemer & Lake Erie, and Chicago Transit Authority are not illustrated but also use RTC.

Freight Operating Statistics of Large Railroads—Selected Items

Region	Road and Year	Miles of road operated	Train miles	Locomotive Miles: Principal and helper	Locomotive Miles: Light	Car Miles: Loaded (thousands)	Car Miles: Per cent loaded	Ton-miles (thousands): Gross excl. locos & tenders	Ton-miles (thousands): Net rev. and non-rev	Road-locos. on lines: Serviceable: Unstored	Road-locos. on lines: Serviceable: Stored	Road-locos. on lines: B.O.	Road-locos. on lines: Per cent B.O.
New Eng. Region	Boston & Maine 1959	1,546	205,971	206,171	2,821	7,552	62.3	535,580	221,261	80	3	30	26.5
	1958	1,559	201,523	201,871	3,680	7,620	61.4	536,658	219,789	59	19	15	16.1
	N. Y., N. H. & Htfd 1959	1,739	236,580	237,192	16,206	8,807	65.0	579,974	238,873	60	..	12	16.7
	1958	1,739	233,121	233,121	15,299	9,734	65.1	642,278	269,432	71	..	16	18.4
Great Lakes Region	Delaware & Hudson 1959	764	149,525	151,697	2,204	7,700	67.2	549,754	274,963	29	3	6	15.8
	1958	764	151,344	153,691	2,793	7,742	64.3	555,795	282,048	34	..	4	10.5
	Del., Lack. & Western 1959	941	213,176	219,720	10,763	8,970	65.2	620,725	259,902	57	..	6	9.5
	1958	918	223,388	226,896	9,329	9,521	64.8	653,825	274,351	58	..	5	7.9
	Erie 1959	2,240	503,137	505,520	10,851	27,107	66.1	1,751,648	682,741	170	1	4	2.3
	1958	2,207	500,906	503,311	11,479	28,355	67.7	1,784,347	705,166	170	2	2	1.1
	Grand Trunk Western 1959	951	175,228	175,257	961	5,271	60.3	390,285	154,713	38	9	23	32.9
	1958	951	193,842	194,237	1,344	6,747	59.9	485,560	189,082	42	15	18	24.0
	Lehigh Valley 1959	1,114	179,489	181,797	5,411	7,949	65.5	549,051	252,410	29	..	5	14.7
	1958	1,116	184,834	187,236	2,748	8,056	63.7	561,916	252,793	28	..	6	17.6
	New York Central 1959	10,333	1,852,730	1,865,428	72,136	78,213	57.2	6,274,566	2,718,362	433	..	54	11.0
	1958	10,447	1,957,079	1,968,232	84,707	81,661	56.3	6,212,031	2,719,242	390	3	55	12.3
	New York, Chic. & St. L. 1959	2,155	541,286	541,286	4,351	25,442	65.3	1,864,254	853,806	106	27	7	5.0
	1958	2,155	553,856	553,856	4,140	25,503	62.1	1,869,015	819,381	99	31	6	4.4
	Pitts. & Lake Erie 1959	221	42,569	42,569	....	1,784	60.6	173,014	102,080	10	..	5	33.3
	1958	221	46,294	46,294	....	1,874	61.8	172,559	105,816	13	1	1	6.7
	Wabash 1959	2,379	373,374	373,839	3,872	18,584	64.1	1,300,722	538,498	111	..	4	3.5
	1958	2,379	467,406	468,705	3,545	19,494	62.3	1,358,552	538,741	112	..	2	1.8
Central Eastern Region	Baltimore & Ohio 1959	5,802	1,235,659	1,324,787	91,218	53,534	60.2	4,280,712	2,085,013	379	40	33	7.3
	1958	5,830	1,269,680	1,369,206	96,000	58,424	59.7	4,539,024	2,177,750	411	78	17	3.4
	Bessemer & Lake Erie 1959	203	38,594	40,310	6	1,537	62.5	178,971	116,553	12	..	..	..
	1958	203	44,284	43,988	58	2,026	71.6	212,120	140,259	13	1	..	..
	Central RR Co. of New Jersey 1959	497	99,758	101,068	5,376	3,932	66.5	304,280	166,597	58	2	5	7.7
	1958	600	108,522	109,737	5,505	4,045	65.0	313,186	166,365	61	..	5	7.6
	Chicago & Eastern Ill. 1959	863	101,690	102,338	2,275	3,895	57.3	325,817	160,044	26	..	4	13.3
	1958	863	127,695	127,695	2,349	4,900	59.0	387,925	185,967	27	..	3	10.0
	Elgin, Joliet & Eastern 1959	205	51,304	51,917	....	1,656	63.6	137,827	76,818	41	2	..	..
	1958	236	53,248	53,376	....	2,021	61.3	167,890	90,959	39	4	1	2.3
	Pennsylvania System 1959	9,865	2,424,063	2,542,436	164,167	105,074	63.3	8,041,506	3,846,379	666	6	84	11.1
	1958	9,885	2,528,019	2,661,158	168,959	108,547	62.0	8,240,858	3,838,534	671	33	113	14.4
	Reading 1959	1,302	266,791	267,964	9,687	10,854	61.8	938,611	511,479	149	4	22	12.5
	1958	1,302	281,355	282,911	9,775	11,129	59.4	934,460	486,139	131	12	33	18.3
	Western Maryland 1959	843	127,844	132,726	7,723	5,755	64.6	508,039	291,169	40	2	1	2.3
	1958	844	145,515	152,012	9,428	6,133	59.6	551,481	311,672	41	2	2	4.4
Pocahontas Region	Chesapeake & Ohio 1959	5,060	1,090,996	1,093,554	19,899	51,898	55.7	4,692,881	2,626,947	586	..	44	7.0
	1958	5,066	1,191,810	1,195,727	21,830	56,188	54.1	5,072,708	2,804,288	578	..	25	4.1
	Norfolk & Western 1959	2,116	545,780	561,873	27,347	28,874	55.8	2,818,557	1,537,978	139	20	11	6.5
	1958	2,116	586,715	616,929	40,287	30,600	55.6	2,972,554	1,611,160	177	22	6	2.9
	Rich. Fred. & Potomac 1959	110	33,955	33,955	641	2,254	67.2	150,884	64,673	14	1	..	..
	1958	110	35,068	35,068	742	2,304	62.3	158,460	63,472	14	1	..	..
	Virginian 1959	608	124,736	126,926	3,356	6,316	55.3	606,787	346,969	55	8	13	22.2
	1958	608	137,860	140,185	3,517	7,334	53.5	715,089	401,758	49	13	15	19.5
Southern Region	Atlantic Coast Line 1959	5,258	620,497	620,497	6,387	23,924	59.1	1,871,030	877,833	117	..	1	.3
	1958	5,296	624,794	624,794	6,302	23,122	56.3	1,817,019	811,690	113	10	..	..
	Central of Georgia 1959	1,712	181,928	181,928	2,157	7,259	64.0	550,688	268,631	33	..	2	5.7
	1958	1,730	192,185	192,185	2,205	7,634	63.9	581,778	282,833	33	..	2	5.7
	Florida East Coast 1959	572	98,172	98,172	....	3,165	53.8	246,479	88,392	54	..	..	..
	1958	571	112,705	112,705	....	3,859	52.1	302,691	106,657	49	..	4	7.5
	Gulf, Mobile & Ohio 1959	2,717	256,448	256,448	....	15,003	65.5	1,089,014	526,348	86	..	5	5.5
	1958	2,717	253,815	253,815	....	14,241	64.3	1,030,195	487,231	84	..	7	7.7
	Illinois Central 1959	6,500	987,100	987,100	26,053	44,744	60.0	3,429,326	1,611,086	187	10	177	47.3
	1958	6,497	1,013,397	1,013,397	26,234	44,024	59.5	3,357,192	1,551,576	184	43	156	40.7
	Louisville & Nashville 1959	5,678	886,433	887,151	14,160	35,001	59.7	2,837,624	1,406,969	170	..	4	2.3
	1958	5,680	870,213	872,355	16,357	35,227	58.1	2,821,851	1,375,875	156	..	3	1.9
	Seaboard Air Line 1959	4,135	576,411	576,411	1,398	23,917	59.2	1,890,967	875,261	125	..	4	3.1
	1958	4,135	569,611	569,611	817	23,423	58.1	1,846,944	850,589	136	..	6	4.2
	Southern 1959	6,243	828,742	828,944	8,856	39,662	64.3	2,775,879	1,307,379	198	5	3	1.5
	1958	6,249	838,205	838,431	8,996	40,256	64.2	2,785,634	1,293,258	193	1	3	1.5
Northwestern Region	Chicago & North Western 1959	9,244	804,195	804,195	8,236	29,049	61.0	2,175,429	933,922	152	..	19	11.1
	1958	9,254	807,339	807,432	8,723	34,930	60.1	2,238,388	1,047,900	171	..	16	8.6
	Chicago Great Western 1959	1,437	128,342	128,342	152	6,265	64.7	456,070	213,888	25	..	2	7.4
	1958	1,437	125,170	125,170	183	6,464	64.6	456,670	206,440	26	..	..	..
	Chic., Milw., St. P. & Pac. 1959	10,591	792,716	799,182	10,459	35,328	62.6	2,455,076	1,073,786	303	18	16	4.7
	1958	10,582	840,667	852,388	14,055	38,429	61.0	2,736,340	1,191,636	285	6	11	3.6
	Duluth, Missabe & Iron Range. 1959	556	75,251	75,410	626	3,223	50.8	340,848	204,975	81	..	1	1.2
	1958	554	39,308	39,396	467	1,382	52.0	151,655	89,906	52	23	12	13.8
	Great Northern 1959	8,279	961,122	963,283	19,596	39,343	61.3	2,953,515	1,330,802	277	..	12	4.2
	1958	8,281	924,637	928,172	22,369	39,386	63.8	2,894,785	1,339,862	266	..	16	5.7
	Minneap., St.P. & S.Ste. Marie 1959	4,169	337,687	337,935	248	12,005	64.5	830,358	372,185	84	5	10	10.1
	1958	4,169	353,557	354,086	447	12,326	63.5	848,650	376,025	90	8	1	1.0
	Northern Pacific 1959	6,538	762,013	767,990	8,865	29,875	59.9	2,146,450	901,149	242	..	4	1.6
	1958	6,533	763,712	771,176	11,424	31,229	61.5	2,231,909	964,973	235	3	6	2.5
	Spokane, Portland & Seattle 1959	935	136,149	136,149	1,011	5,464	69.1	362,875	161,647	53	..	..	..
	1958	935	139,526	139,526	1,303	5,989	74.8	401,121	197,194	52	..	2	3.7
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1959	12,992	2,679,061	2,854,332	51,568	110,879	62.7	7,996,290	3,082,122	619	..	50	7.5
	1958	13,081	2,506,751	2,697,858	69,572	115,825	61.2	8,404,023	3,225,113	579	4	107	15.5
	Chic., Burl. & Quincy 1959	8,647	1,055,176	1,054,724	23,636	44,383	63.3	3,099,176	1,334,486	148	5	74	32.6
	1958	8,657	1,097,162	1,096,048	33,671	46,243	61.2	3,305,838	1,421,532	145	9	72	31.9
	Chic., Rock I. & Pac. 1959	7,508	827,695	828,372	1,357	33,805	60.6	2,508,678	1,054,446	185	..	9	4.6
	1958	7,548	945,350	943,575	2,774	35,670	60.7	2,658,352	1,138,667	176	..	9	4.9
	Denver & R. G. Wn. 1959	2,128	277,727	293,957	30,480	13,492	73.8	946,277	465,420	81	5	11	11.3
	1958	2,155	293,211	312,070	30,604	14,260	74.4	976,439	488,896	81	8	8	8.2
	Southern Pacific 1959	8,011	1,961,884	2,040,897	123,930	90,014	66.1	6,207,951	2,700,806	684	15	65	8.5
	1958	8,024	1,990,202	2,067,601	113,489	93,701	65.9	6,402,196	2,739,647	640	5	43	6.3
	Union Pacific 1959	9,743	2,076,053	2,097,086	47,302	100,941	65.3	6,763,248	2,846,545	370	30	79	16.5
	1958	9,748	2,241,320	2,279,291	63,880	104,181	64.4	7,094,675	2,980,996	368	24	113	22.4
	Western Pacific 1959	1,188	244,701	250,658	15,980	10,016	67.3	667,371	288,344	44	..	2	4.3
	1958	1,189	241,636	247,317	22,158	10,408	70.6	679,547	303,883	45	..	2	4.3
Southwestern Region	Kansas City Southern 1959	886	118,548	118,597	165	7,490	64.2	577,924	271,271	24	..	2	7.7
	1958	886	132,756	132,779	214	6,888	64.5	522,014	240,673	21	..	1	4.5
	Louisiana & Arkansas 0000	746	79,016	79,016	....	3,950	64.5	316,810	154,846	19	..	..	..
	1958	746	69,843	69,843	28	3,729	65.4	289,727	139,047	20	..	..	..
	Mo.-Kans.-Texas Lines 1959	2,916	205,555	205,555	1,971	9,054	63.0	676,561	306,344	54	..	5	8.5
	1958	2,915	206,006	206,006	1,862	9,861	61.6	728,994	323,482	71	..	2	2.7
	Missouri Pacific 1959	9,428	1,093,896	1,093,896	7,832	48,620	64.2	3,575,479	1,651,648	203	2	19	8.3
	1958	9,515	1,072,680	1,072,680	8,191	50,569	62.7	3,690,428	1,673,559	214	18	22	8.7
	St. Louis-San Francisco 1959	4,527	583,843	583,843	7,652	24,684	68.0	1,662,253	774,503	91	..	12	11.7
	1958	4,541	581,383	581,383	6,586	23,943	65.9	1,647,628	760,953	95	..	11	10.4
	St. Louis Southw. Lines 1959	1,554	305,772	305,772	4,006	13,293	71.6	842,604	376,655	51	..	1	1.9
	1958	1,554	310,384	310,444	1,603	14,463	67.3	942,316	421,228	56	..	..	..
	Texas & New Orleans 1959	4,079	560,836	560,836	79	25,443	67.0	1,789,253	833,768	137	..	4	2.8
	1958	4,206	606,490	606,490	523	27,235	64.4	1,939,287	876,629	134	..	5	3.6
	Texas & Pacific 1959	1,819	278,179	278,179	2,600	12,266	65.3	888,293	352,682	37	..	3	7.5
	1958	1,822	276,539	276,539	2,537	12,983	61.7	960,464	370,951	39	..	2	4.9

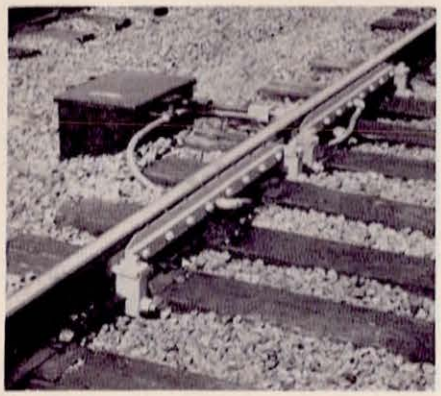
For the Month of November 1959 Compared with November 1958

Region	Road	Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. excl.locos and tenders	G.t.m.per train-mi. excl.locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine	1959	2,035	8,056	10,091	3.2	40,513	2,603	1,075	29.3	737	40.4	4,771	15.6	69.8
		1958	2,285	6,706	8,991	3.3	43,423	2,667	1,092	28.8	800	45.1	4,699	16.3	80.5
	N. Y., N. H. & Htfd	1959	3,659	13,305	16,964	7.6	38,046	2,451	1,010	27.1	479	27.2	4,579	15.5	137.3
		1958	3,023	12,650	15,673	4.8	43,758	2,755	1,156	27.7	588	32.6	5,164	15.9	114.8
Great Lakes Region	Delaware & Hudson	1959	2,482	5,205	7,687	9.8	65,815	3,694	1,848	35.7	1,093	45.5	11,997	17.9	143.9
		1958	4,404	5,105	9,509	10.1	67,263	3,692	1,874	36.4	956	40.8	12,306	18.3	146.7
	Del., Lack. & Western	1959	5,497	7,972	13,469	12.6	52,751	2,947	1,234	29.0	651	34.5	9,207	13.1	134.5
		1958	6,570	8,637	15,207	11.2	54,897	2,962	1,243	28.8	621	33.3	9,962	18.8	136.0
	Erie	1959	10,583	13,843	24,426	9.3	74,270	3,507	1,367	25.2	911	54.8	10,160	21.3	108.7
		1958	11,178	13,088	24,266	8.6	73,852	3,593	1,420	24.9	944	56.0	10,650	20.7	110.0
	Grand Trunk Western	1959	4,997	7,572	12,569	4.9	51,761	2,174	884	29.4	413	23.3	5,423	23.9	88.8
		1958	5,068	7,057	12,125	7.0	55,889	2,525	983	28.0	525	31.3	6,627	22.3	95.3
	Lehigh Valley	1959	6,195	8,001	14,196	11.9	64,823	3,086	1,419	31.8	595	28.6	7,553	21.2	201.9
		1958	6,990	8,427	15,417	8.7	65,644	3,069	1,381	31.4	546	27.3	7,551	21.6	205.5
	New York Central	1959	60,992	75,920	136,912	8.6	59,806	3,420	1,482	34.8	664	33.4	8,769	17.7	153.5
		1958	62,008	76,167	138,175	8.8	57,298	3,205	1,403	33.3	661	35.2	8,676	18.1	167.6
	New York, Chic. & St. L.	1959	9,054	16,713	25,767	14.4	63,195	3,490	1,599	33.6	1,148	52.4	13,207	18.3	145.1
		1958	11,330	11,873	23,203	14.6	62,885	3,412	1,496	32.1	1,147	57.5	12,674	18.6	152.4
	Pitts. & Lake Erie	1959	7,853	4,132	11,985	5.7	64,389	4,128	2,435	57.2	301	8.7	15,397	15.8	80.1
		1958	5,855	4,256	10,111	9.7	62,932	3,731	2,288	56.5	337	9.6	15,960	16.9	110.9
	Wabash	1959	9,993	6,908	16,901	11.9	77,535	3,501	1,449	29.0	1,072	57.7	7,545	22.3	114.8
		1958	10,596	9,457	20,053	5.9	68,527	2,919	1,158	27.6	911	53.0	7,549	23.6	146.3
Central Eastern Region	Baltimore & Ohio	1959	61,893	38,277	100,170	17.8	56,156	3,521	1,715	38.9	693	29.5	11,979	16.2	107.7
		1958	57,975	41,421	99,396	15.6	57,745	3,618	1,736	37.3	731	32.8	12,451	16.2	99.3
	Bessemer & Lake Erie	1959	3,437	1,208	4,645	7.5	73,559	4,954	3,226	75.8	587	12.4	19,138	15.9	124.6
		1958	5,092	696	5,788	8.3	79,684	5,102	3,374	69.2	807	16.3	23,031	16.6	126.4
	Central RR Co. of New Jersey	1959	3,998	10,945	14,943	17.8	45,246	3,158	1,729	42.4	379	13.4	9,302	14.8	74.8
		1958	4,052	9,359	13,411	14.6	43,589	3,010	1,599	41.1	439	16.4	9,243	15.1	77.3
	Chicago & Eastern Ill	1959	3,285	2,170	5,455	21.2	60,381	3,225	1,584	41.1	914	38.8	6,182	18.8	116.0
		1958	2,703	2,161	4,864	10.9	58,705	3,056	1,465	38.0	1,166	52.1	7,183	19.3	140.8
	Elgin, Joliet & Eastern	1959	7,990	5,483	13,473	4.8	20,985	2,792	1,556	46.4	207	7.0	12,491	7.8	56.5
		1958	7,726	6,324	14,050	4.3	22,164	3,245	1,758	45.0	219	7.9	12,847	7.0	57.1
	Pennsylvania System	1959	108,536	86,952	195,488	14.7	58,177	3,422	1,637	36.6	654	28.2	12,997	17.5	131.6
		1958	128,196	72,714	200,910	20.7	57,734	3,350	1,560	35.4	640	29.2	12,944	17.7	121.3
	Reading	1959	15,822	17,230	33,052	21.6	54,011	3,519	1,918	47.1	514	17.6	13,095	15.4	64.6
		1958	17,804	19,319	37,123	19.3	51,460	3,321	1,728	43.7	445	17.1	12,446	15.5	64.5
	Western Maryland	1959	5,568	3,406	8,974	6.3	56,898	4,036	2,313	50.6	1,030	31.5	11,513	14.3	137.4
		1958	7,592	3,157	10,749	2.9	57,309	3,876	2,190	50.8	1,003	33.1	12,309	15.1	131.5
Pocahontas Region	Chesapeake & Ohio	1959	57,649	28,507	86,156	5.2	80,079	4,325	2,421	50.6	997	35.3	17,305	18.6	63.5
		1958	61,535	30,191	91,726	5.5	79,707	4,277	2,365	49.9	1,013	37.5	18,452	18.7	72.6
	Norfolk & Western	1959	36,323	7,802	44,125	4.4	94,279	5,264	2,873	53.3	1,095	36.8	24,228	18.3	129.8
		1958	44,808	9,655	54,463	4.2	91,435	5,193	2,815	52.7	1,036	35.4	25,381	18.0	114.6
	Rich. Fred. & Potomac	1959	115	979	1,094	3.0	101,469	4,453	1,909	28.7	1,946	100.8	19,598	22.8	80.6
		1958	109	831	940	3.1	95,515	4,523	1,812	27.5	2,105	122.6	19,234	21.1	83.8
	Virginian	1959	11,479	1,613	13,092	2.0	74,553	4,964	2,838	54.9	911	30.0	19,022	15.3	60.0
		1958	12,507	1,628	14,135	3.1	78,126	5,274	2,963	54.8	952	32.5	22,026	15.1	69.2
Southern Region	Atlantic Coast Line	1959	18,360	16,670	35,030	4.8	51,309	3,024	1,419	36.7	845	38.9	5,565	17.0	200.2
		1958	20,783	14,650	35,433	3.6	51,472	2,916	1,302	35.1	758	38.4	5,109	17.7	179.1
	Central of Georgia	1959	3,504	5,232	8,736	3.6	52,930	3,031	1,479	37.0	1,018	43.0	5,230	17.5	195.2
		1958	3,633	4,780	8,413	4.0	53,458	3,032	1,474	37.0	1,047	44.2	5,450	17.7	197.5
	Florida East Coast	1959	695	3,791	4,486	.5	43,287	2,511	900	27.9	709	47.1	5,151	17.2	67.1
		1958	868	3,988	4,856	.8	44,507	2,686	946	27.6	754	52.4	6,226	16.6	78.5
	Gulf, Mobile & Ohio	1959	6,695	10,521	17,216	5.8	78,868	4,249	2,053	35.1	1,001	44.0	6,457	18.6	102.3
		1958	7,105	9,841	16,946	5.5	79,638	4,062	1,921	34.2	994	45.1	5,978	19.6	100.9
	Illinois Central	1959	25,530	26,354	51,884	3.5	60,062	3,496	1,642	36.0	1,025	47.4	8,262	17.3	98.6
		1958	27,133	21,994	49,127	3.9	58,871	3,342	1,544	35.2	995	47.4	7,960	17.8	97.5
	Louisville & Nashville	1959	33,485	19,069	52,554	10.8	57,390	3,213	1,593	40.2	883	37.0	8,260	17.9	195.1
		1958	35,316	17,951	53,267	6.7	55,490	3,250	1,584	39.1	883	39.2	8,074	17.1	205.1
	Seaboard Air Line	1959	15,829	14,489	30,318	3.3	59,673	3,344	1,548	36.6	953	44.2	7,056	18.2	179.3
		1958	17,770	11,796	29,566	2.7	61,054	3,290	1,515	36.3	959	45.5	6,857	18.8	152.3
	Southern	1959	19,666	28,215	47,881	3.9	58,784	3,356	1,581	33.0	902	42.6	6,981	17.5	151.3
		1958	18,177	29,022	47,199	4.9	58,712	3,330	1,546	32.1	929	45.0	6,898	17.7	151.9
Northwestern Region	Chicago & North Western	1959	21,617	26,387	48,004	5.1	50,112	2,714	1,165	32.1	619	31.6	3,368	18.5	159.1
		1958	23,026	22,972	45,998	4.6	53,015	2,787	1,305	30.0	738	40.9	3,775	19.1	162.1
	Chicago Great Western	1959	2,391	4,019	6,410	3.5	65,181	3,562	1,670	34.1	1,100	49.8	4,961	18.3	171.0
		1958	2,051	3,216	5,267	4.4	70,878	3,656	1,653	31.9	1,265	61.3	4,789	19.4	171.2
	Chic., Milw., St. P. & Pac.	1959	28,748	24,572	53,320	4.1	63,367	3,107	1,359	30.4	682	35.8	3,380	20.5	85.3
		1958	32,666	23,849	56,515	4.3	65,184	3,261	1,420	31.0	681	36.0	3,754	20.0	102.8
	Duluth, Missabe & Iron Range	1959	12,928	749	13,677	1.8	75,044	4,913	2,955	63.6	512	15.8	12,289	16.6	36.7
		1958	14,562	768	15,330	4.2	68,282	4,169	2,472	65.1	197	5.8	5,410	17.7	16.2
	Great Northern	1959	22,783	24,373	47,156	3.0	61,841	3,117	1,404	33.8	998	48.1	5,358	20.1	125.0
		1958	22,947	22,135	45,082	2.9	64,299	3,177	1,470	34.0	991	45.7	5,393	20.5	123.9
	Minneap., St. P. & S. Ste. Marie	1959	6,949	7,042	13,991	7.0	49,660	2,472	1,108	31.0	903	45.1	2,976	20.2	123.7
		1958	6,312	6,404	12,716	7.1	48,156	2,412	1,069	30.5	962	49.6	3,007	20.1	133.1
	Northern Pacific	1959	18,242	17,423	35,665	3.0	59,330	2,821	1,184	30.2	876	48.5	4,594	21.1	112.9
		1958	18,807	17,731	36,538	3.3	63,531	2,926	1,265	30.9	923	48.6	4,924	21.7	113.8
	Spokane, Portland & Seattle	1959	1,527	4,386	5,913	2.3	40,768	2,678	1,193	29.6	963	47.1	5,763	15.3	97.9
		1958	1,520	4,568	6,088	2.2	47,202	2,889	1,420	32.9	1,082	43.9	7,030	16.4	94.4
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1959	50,421	37,606	88,027	3.5	76,091	2,998	1,155	27.8	1,146	65.8	7,908	25.5	152.9
		1958	51,685	40,080	91,765	7.1	79,320	3,361	1,290	27.8	1,203	70.5	8,218	23.7	142.0
	Chic., Burl. & Quincy	1959	23,808	19,356	43,164	4.0	63,224	2,949	1,270	30.1	1,040	54.7	5,144	21.5	167.0
		1958	24,536	21,395	45,931	3.3	64,317	3,018	1,298	30.7	1,003	53.3	5,474	21.3	174.5
	Chic., Rock I. & Pac.	1959	15,458	21,656	37,114	4.8	63,803	3,037	1,276	31.2	938	49.6	4,681	21.1	154.0
		1958	16,218	22,838	39,056	4.8	61,483	2,819	1,207	31.9	956	49.3	5,029	21.9	182.6
	Denver & R. G. Wn.	1959	7,636	6,413	14,049	5.9	68,946	3,415	1,679	34.5	1,098	43.2	7,290	20.2	120.5
		1958	7,653	5,978	13,631	5.2	65,762	3,338	1,672	34.3	1,125	44.1	7,562	19.7	125.8
	Southern Pacific	1959	30,824	37,246	68,070	1.9	70,425	3,206	1,395	30.0	1,246	62.8	11,238	22.3	101.8
		1958	34,071	40,156	74,227	1.9	68,315	3,257	1,394	29.2	1,233	63.9	11,381	21.2	114.5
	Union Pacific	1959	31,705	30,699	62,404	2.0	87,471	3,281	1,381	28.2	1,488	80.8	9,739	26.9	156.5
		1958	31,268	36,365	67,633	1.6	84,049	3,187	1,339	28.6	1,506	81.8	10,194	26.6	160.6
	Western Pacific	1959	2,313	2,722	5,035	4.2	76,306	2,740	1,184	28.8	1,792	92.5	8,090	28.0	194.7
		1958	2,665	3,219	5,884	2.6	77,805	2,832	1,266	29.2	1,713	83.2	8,519	27.7	197.8
Southwestern Region	Kansas City Southern	1959	2,353	5,548	7,901	5.6	100,264	4,893	2,297	36.2	1,155	49.7	10,206	20.6	193.4
		1958	2,889	4,691	7,580	5.9	87,104	3,963	1,827	34.9	1,066	47.3	9,055	22.2	222.6
	Louisiana & Arkansas	1959	2,028	3,213	5,241	6.2	80,490	4,063	1,986	39.2	991	39.2	6,919	20.1	165.4
		1958	2,273	2,964	5,237	7.3	83,231	4,176	2,004	37.3	898	36.8	6,213	20.1	149.8
	Mo.-Kans.-Texas Lines	1959	4,972	6,880	11,852	9.2	55,524	3,301	1,495	33.8	903	42.4	3,502	16.9	130.0
		1958	5,330	7,461	12,791	9.3	58,413	3,546	1,573	32.8	843	41.7	3,699	16.5	99.3
	Missouri Pacific	1959	23,648	23,216	46,864	6.7	67,632	3,282	1,516	34.0	1,106	50.7	5,840	20.7	172.4
		1958	24,118	22,414	46,532	8.4	70,171	3,459	1,568	33.1	1,165	56.2	5,863	20.4	154.3
	St. Louis-San Francisco	1959	10,942	8,837	19,779	1.8	59,248	2,864	1,334	31.4	1,184	55.5	5,703	20.8	205.0
		1958	12,529	9,185	21,714	2.0	59,494	2,850	1,316	31.8	1,110	53.0	5,586	21.0	198.6
	St. Louis Southw. Lines	1959	2,326	3,722	6,048	2.3	65,639	2,761	1,234	28.3	1,903	93.7	8,079	23.8	206.3
		1958	2,589	4,410	6,999	3.2	71,954	3,046	1,362	29.1	1,904	97.1	9,035	23.7	200.3
	Texas & New Orleans	1959	6,789	15,881	22,670	2.1	77,213	3,206	1,494	32.8	1,310	59.7	6,814	24.2	140.0
		1958	6,641	15,035	21,676	1.7	73,959	3,213	1,452	32.2	1,373	66.2	6,947	23.1	154.7
	Texas & Pacific	1959	3,555	5,991	9,546	3.8	72,668	3,224	1,280	28.8	1,266	67.5	6,463	22.8	249.9
		1958	3,617	5,647	9,264	4.2	73,396	3,497	1,351	28.6	1,331	75.4	6,787	21.1	252.7

Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission. Subject to revision.

PRODUCT NEWS

FOR ENGINEERS AND MAINTENANCE OF WAY PERSONNEL



Rail Lubricator

Maximum efficiency and reduced maintenance costs are the benefits claimed to result from recent improvements to the Meco Model MC rail-and-flange lubricator. It is stated that usable lubricant capacity has been increased from 200 to 320 lb, an altered pump mechanism permits easier adjustment and a revised actuating mechanism provides greater durability and simplified operation. *Maintenance Equipment Company, Dept. RA, Chicago 4.*

Cribbing Machine

Operation by one man has been made possible, it is claimed, by the addition of a new hydraulic self-propulsion unit to the Nordberg Cribex. This feature is stated to eliminate the need of a helper and enables the cribbing operation to be accomplished faster. The new unit is stated to permit the operator to rock the Cribex back and forth to completely excavate wide cribs. *Nordberg Manufacturing Company, Dept. RA, Milwaukee, Wis.*

Tie Remover

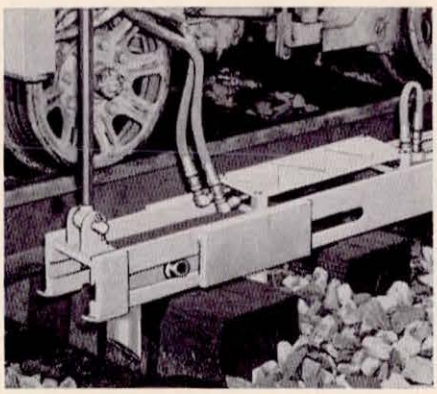
High-speed removal of ties from track is claimed for the new Fairmont W68 Series B hydraulic tie remover. The manufacturer states that the new machine is self-propelled and operated by one man. It is equipped with a double-pump and an automatic control for changing over to high pressure when maximum push is required to remove tightly embedded ties. *Fairmont Railway Motors, Inc., Dept. RA, Fairmont, Minn.*

Protective Seals

Aluminum foil coated on one side with a rubberized sealing composition is claimed to effectively seal out moisture and abrasives from between ties and tie plates. Known as Protek-Tie Seals, they are said to bond permanently to the ties. It is said they can be rapidly dropped onto the adzed surfaces of ties and that the smooth foil upper surface speeds alinement of tie plates. *Daubert Chemical Company, Dept. RA, Chicago 38.*

Utility Trailer

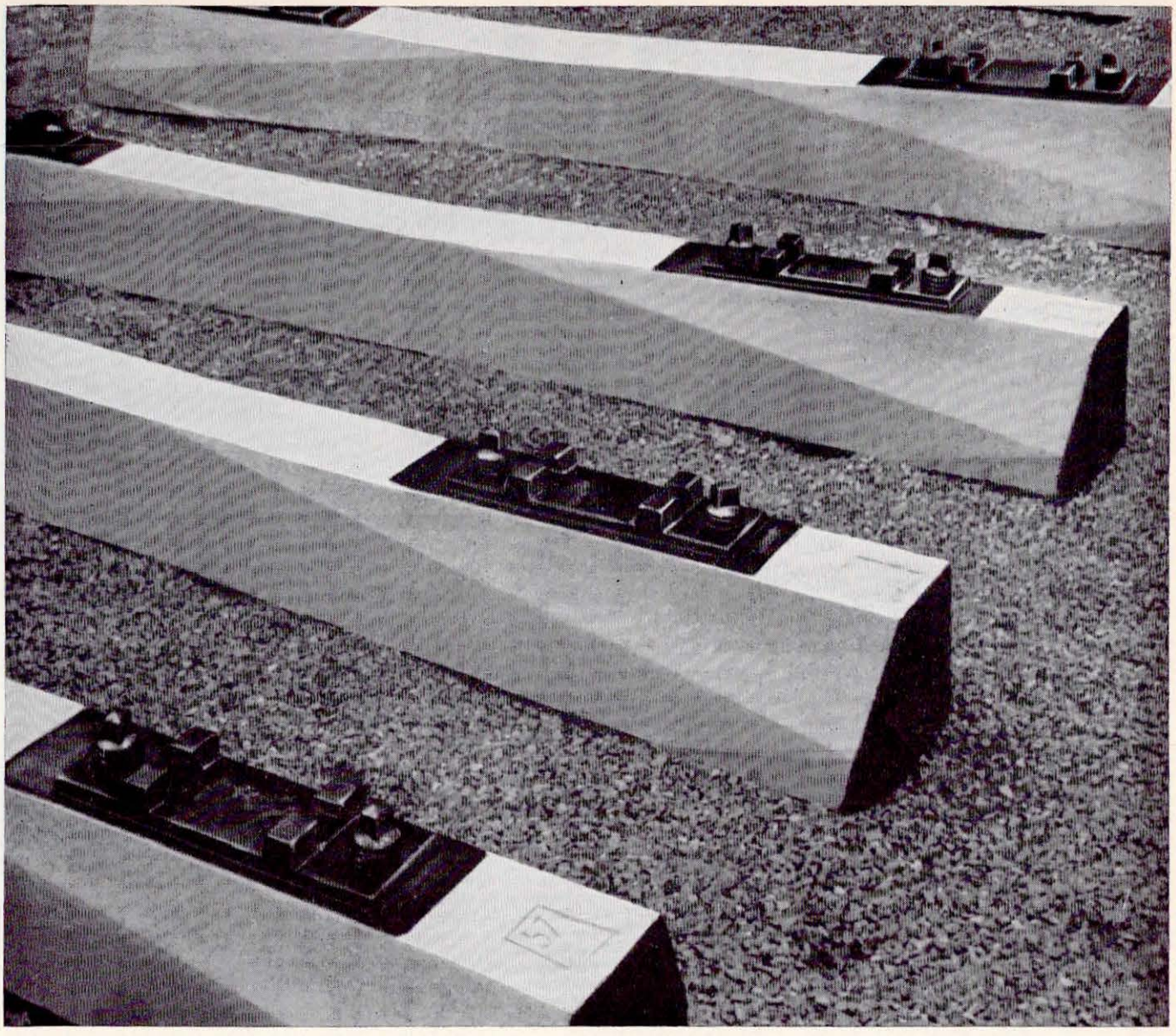
Equipped with rails for moving on-track machines over the highway, the Kershaw utility trailer can also carry off-track machines by folding the rails over the side. It is available with single, dual or triple axles and can be hitched to a lightweight truck. To load or unload on-track machines the brakes on the trailer are set and rail ramps placed into position. *Kershaw Manufacturing Company, Dept. RA, Montgomery 3, Ala.*



Tie-Spacing Machine

A new clamping mechanism has been installed on the RMC Tie Spacer for the purpose of providing positive gripping of the rail, even, it is claimed, in the presence of grease or severe rail wear. The machine uses a set of hydraulic shifting devices, one on each side, to correct poorly spaced or slewed ties. They may be used together or independently of each other. *Railway Maintenance Corp., Dept. RA, Pittsburgh 30.*

(*More Product News on page 44*)



U.S. CROSSTIE COMPANY

Karig System

POST-TENSIONED CONCRETE RAILROAD TIES

For information write, wire, or phone:

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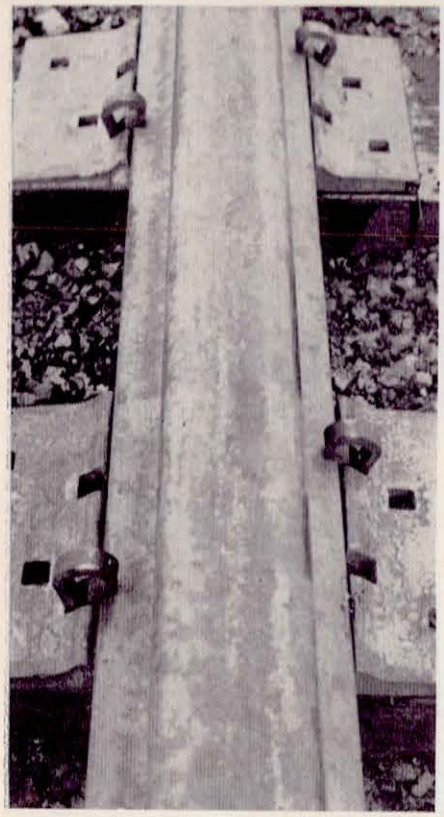
8704 West Schlinger Avenue, Milwaukee 14, Wisconsin — SPring 4-1017

PRODUCT NEWS

FOR ENGINEERS AND MAINTENANCE OF WAY PERSONNEL



Rail Lock Spike

Elimination of movement between the shoulders of the tie plate and the rail base is claimed by the use of the Bernuth, Lembcke Rail Lock Spike. Stated to be a rail spike as well as a plate fastening, it is applied in the line holes of tie plates. The manufacturer states the new spike is similar to its Gage Lock Spike.

The main difference between the two is the slight protrusion under the head of the Rail Lock Spike, at the position of the tie plate surface, instead of the offset that exists under the head of the Gage Lock Spike. The manufacturer states that the function of the protrusion is to bind against the rail base, skewing the plate so that the opposite shoulder is forced into contact with the base of the rail.

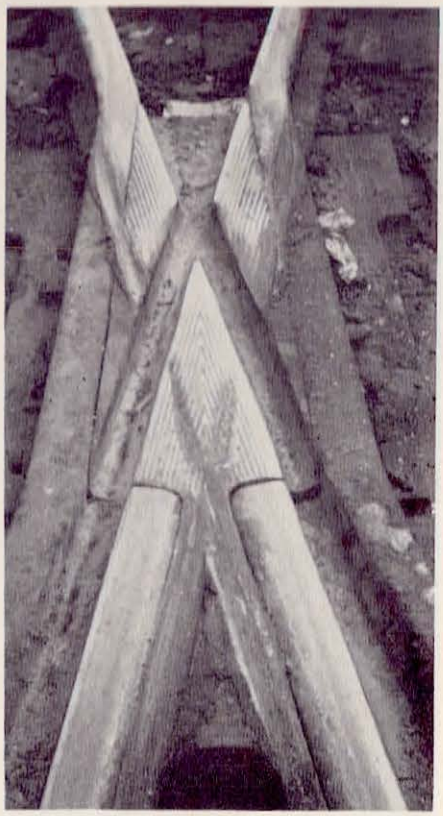
In this way, it is said, the base of rail is held tightly in the tie plate with all movement between the two eliminated. The new spike is 6⅞ in. long and has a chamfered tip end. Its head is 1⅝ in. long. *Bernuth, Lembcke, Inc., Dept. RA, 420 Lexington Ave., New York 17.*

Traxcavators

Featuring lift arms and hydraulic cylinders which are located ahead of the operator's compartment, the Caterpillar No. 944 Wheeled Traxcavator is the first machine available in a new line of wheeled loaders. The bucket of the No. 944 has a capacity of 2 cu yd and is standard equipment.

The new line includes two other units, to become available later this spring, the No. 922 and No. 966. These machines will be equipped with a standard bucket of 1¼- and 2¾-cu yd capacity, respectively. The No. 944 is powered by either a gasoline or diesel engine, each of which is rated at 105 net hp.

Dumping reach is stated to be 31¾ in. at the machine's maximum dumping height of 9 ft 2 in. It is designed so that the front tires are the most forward portion of the frame to eliminate damage to truck bodies during loading. Other features include torque converter and powershift transmission, high-capacity hydraulic system and two-lever control of speed and direction. *Caterpillar Tractor Company, Dept. RA, Peoria, Ill.*



Self-Hardening Frog

Flangeways of manganese steel frogs are claimed to be kept free of flowed metal by means of ridges and grooves cast on the point and wings of the frog parallel to the gage line. The ridges are level on top and 1/16 in. wide and project approximately 1/8 in. above the normal top of the casting. The grooves are 1/4 in. wide, except the one nearest the gage line, which is 7/16 in. wide. The manufacturer states that the purpose of the ridges and grooves is to allow the frog to be work-hardened in the track, the grooves providing a place for the flowing metal to go. Wheels rolling on the raw manganese casting tend to flatten the ridge nearest to the gage line into the adjacent groove away from the gage line, it is said. The second ridge on the frog is flattened into the second groove, and so on, until the flow tapers off.

In this manner the flow of metal is said to be kept out of the flangeway while the top of the casting is becoming work hardened. *The Frog, Switch & Mfg. Co., Dept. RA, Carlisle, Pa.*

(More Product News on page 48)

here is your complete maintenance tool kit for Vapor Steam-Life metallic conduits

It's true—one 8″ wrench to replace gaskets when necessary . . . without removing conduit from cars . . . maintains perfect steam tightness when conduits are Steam-Lifed!

AUTOMATICALLY CUT MAINTENANCE COSTS BY 50%: Vapor Steam-Life metallic conduits carry steam between engine and cars without expensive, time-and-profit-wasting removals for 24 to 30 months . . . allow pre-scheduled preventative maintenance.

don't repair conduits . . . Steam-Life them . . . and save!

Conduits can be Steam-Lifed in your own shop by ordering Kit No. 1164-301 for 2″ horizontal conduits; Kit No. 1136-301 for 2″ vertical conduits; Kit No. 1195-301 for 2½″ conduits. Or, do as many others do—send conduits to Vapor and in return receive a Steam-Lifed conduit.

STEAM-LIFE®

VAPOR HEATING CORPORATION
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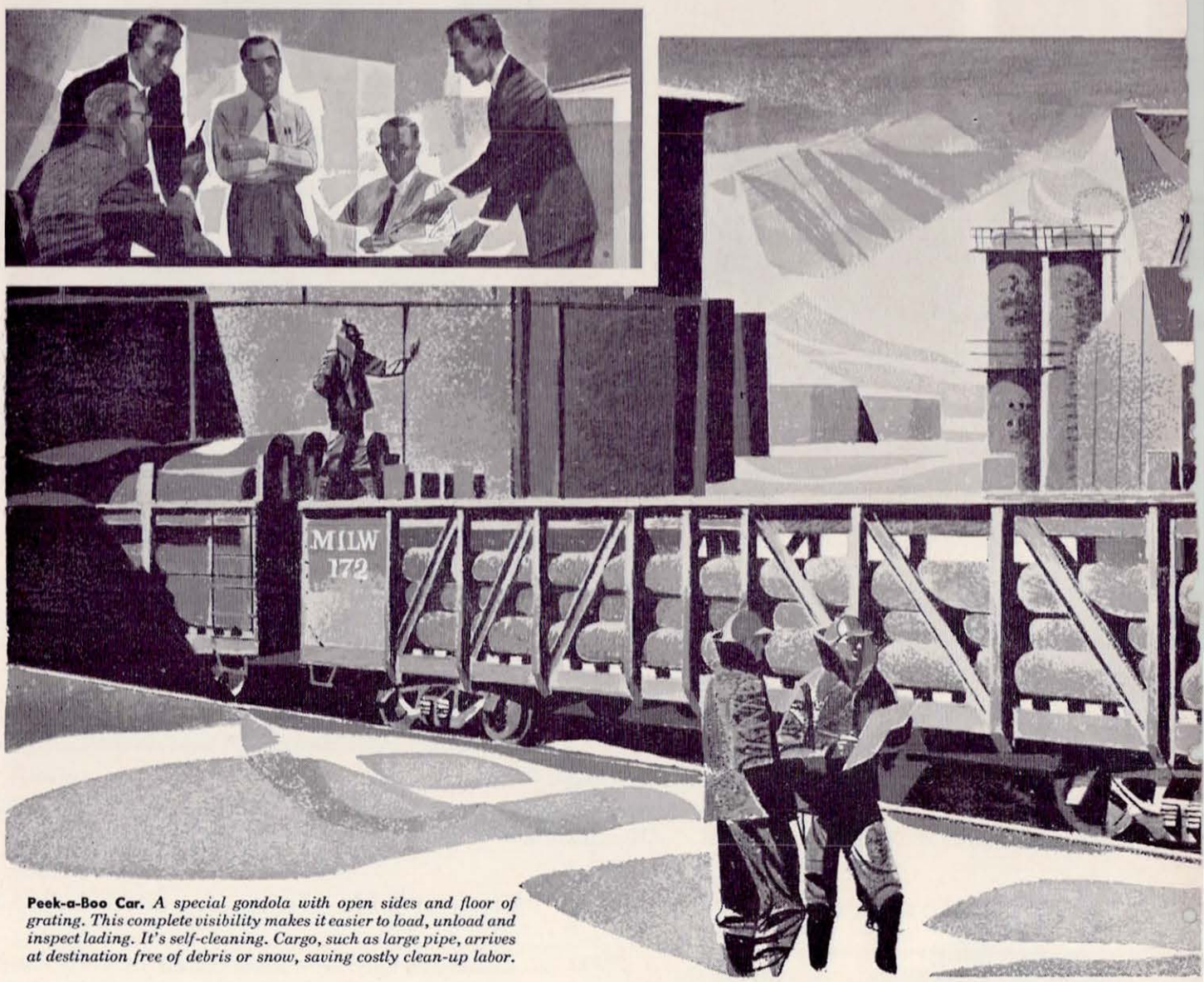
SOMETHING **NEW** IN RAILROADING..

"CREATIVE CREWS



Peek-a-Boo Car. *A special gondola with open sides and floor of grating. This complete visibility makes it easier to load, unload and inspect lading. It's self-cleaning. Cargo, such as large pipe, arrives at destination free of debris or snow, saving costly clean-up labor.*

...they come up with imaginative new ideas like self-cleaning freight cars

Railroad crews, as you ordinarily think of them, work with such tools as shovels, signal lights, switch engines, ticket punchers.

The tools of the Milwaukee Road's Creative Crews are *ideas*. Ideas that often break with old traditions. And break new trails for getting things done.

Example: A shipper of pipe had the problem of snow and debris which his employees had to remove from cars before loading them. From the men in the Milwaukee Road's car shop came the creative answer. Special gondola cars with open sides and *floors of grating* through which snow and debris can fall. Now

of the Milwaukee Road

THE MILWAUKEE ROAD

America's resourceful railroad

called "peek-a-boo" cars, they're saving time and money for *many* shippers.

In addition, because the sides of these cars are open, it is easier to inspect the lading to be sure that the pipe is properly blocked to prevent damage.

These Creative Crews are at work everywhere on the Milwaukee Road. Some wear uniforms. Others, business suits. Still others, overalls. You can't spot them by their clothes but you'll know them by the fresh, imaginative way they solve your shipping problems. Creative Crews thinking! It's making the Milwaukee Road America's *resourceful* railroad.

Route of the Super Dome Hiawathas and Western "Cities" Fleet

PRODUCT NEWS

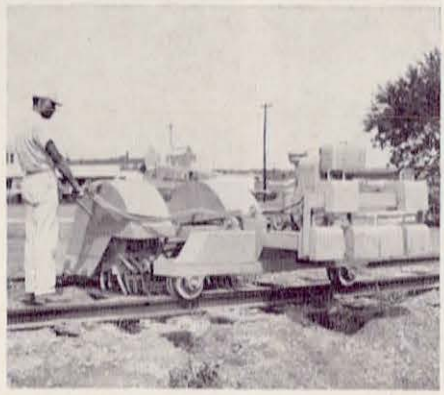
FOR ENGINEERS AND MAINTENANCE OF WAY PERSONNEL

Cribbing Machine

Chain-driven cribbing wheels and a larger engine are two of the improvements claimed for the completely redesigned Kershaw two-wheel Kribber. In addition, propelling of the machine is now foot-controlled and it is equipped with vacuum brakes. The manufacturer states that deadhead clearance is now more easily accomplished. *Kershaw Manufacturing Company, Dept. RA, 2205 West Fairview Ave., Montgomery 3, Ala.*

Hy-Rail Equipment

Trucks of 1½-, 2- and 2½-ton capacity can now be equipped with Hy-Rail guide wheels for operation on either highway or railroad. The wheels are raised or lowered manually. Hydraulic operation is available as an option. The front guide wheels support the entire weight of the front of the vehicle, whereas the rear guide wheels support only a portion of the rear load. *Fairmont Railway Motors, Inc., Dept. RA, Fairmont, Minn.*



Brush-Type Cribber

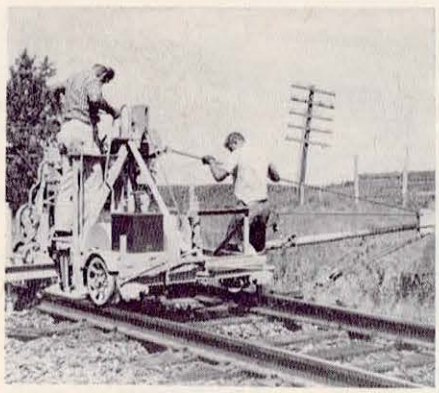
Self-propelled and operated by one man, the new Kershaw brush-type Kribber utilizes the same cable-hose brushes used on the Crib-Adze machine. This type of brush is claimed to give long cribbing life and economical operation. The machine is equipped with two brush wheels for uniform cribbing and a depth gage for determining the depth of cribbing. *Kershaw Manufacturing Company, Dept. RA, Montgomery 3, Ala.*

Tie Pad

Increased bond between asphalt seal and pad and a double-thickness seal are the improvements claimed for the new Fabco Super-Seal tie pad. The improved bond is said to be accomplished by the use of a newly developed master binder which makes the seal an integral part of the pad.

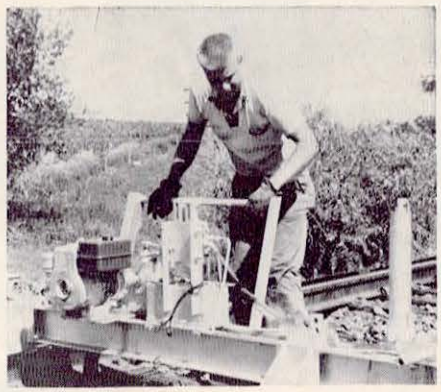
A number of advantages are claimed for the new double-thick seal, including instant binding of pad to tie upon contact, the complete sealing out of water and dirt between pad and tie, resistance to temperature extremes and prevention of water intruding into spike hole. The latter is said to be accomplished by the sealing compound flowing into the hole around the spike. In addition, the manufacturer states that, since the seal is applied to only one side of the pad, the tie plate can move without disturbing the bond between the seal and pad.

The new tie pads are available in ¼ and ⅜ in. thickness and in any length and width up to 12 in. *Fabreeka Products Company, Inc., Dept. RA, 1190 Adams St., Boston 24, Mass.*



Gandy-Snapper

A new feature has been added to the Nordberg Gandy tie puller. Known as the "Snapper," the new device lifts the rail during tie extraction so that the tie will clear "high wood." Manufactured as a special machine, the new Gandy-Snapper (left) is stated to be basically a standard Gandy integrated with the Snapper. During tie-removal operations the Snapper element of the machine is positioned over a tie adjacent to the one to be removed. Rail grips are lowered to hold the rail while two hydraulic rams push downward on the adjacent tie to lift the rail. After the tie is removed, the operator can "snap off" the rams for a sharp return action of the rail. The Snapper (right) is also available as a separate, lightweight, one-man-operated machine. It utilizes a small engine and two vertical rams to lift the rails for removing or inserting tie plates.



The rail clamps are manually operated both for gripping the rail and snapping them off. *Nordberg Manufacturing Co., Dept. RA, Milwaukee, Wis.*

(More Product News on page 51)

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BARRIER CREAM
THE MIRACLE SECOND SKIN OF INDUSTRY

Protect your diesel machinists and section hands from skin hazards! Protect your company against insurance claims, sick leaves, work stoppage caused by dermatitis!

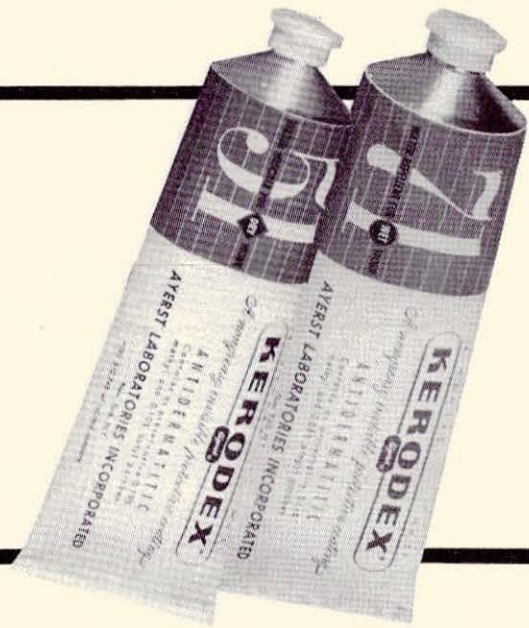
"KERODEX" spreads like a cream; acts like an invisible glove. Won't smear, and won't affect—or be affected by—materials handled. Actual tests on the job prove: "Kerodex" offers complete protection against chromates, acids, poison ivy and hundreds of other irritants.

"KERODEX" 51 FOR DRY WORK

Protects against liquid and solid irritants not soluble in water. When washed off, expansion action provides "lift" that pushes particles and irritants away from the skin.

"KERODEX" 71 FOR WET WORK

Protects against water and water-soluble irritants like diesel salts. Hands may be washed while wearing Kerodex 71 because it does not wash off but gradually wears off.



NEW USES FOR "KERODEX" ARE DISCOVERED BY WORKERS, PLANT MANAGERS, ENGINEERS... ALMOST EVERY DAY!

Protects against acids, solvents, paints, cutting oils, resin.
Write for literature.

EASY TO APPLY!

Just spread "Kerodex" lightly and evenly, rubbing hands together until cream is absorbed by the skin. Spread around wrists, between fingers, into the cuticles and under the nails. For heavy work, apply second coat in the same way.

PLEASE USE COUPON OR SPECIFY IN-PLANT TESTING OFFER ON PURCHASE ORDER

Protect your company against costly insurance claims, extensive sick leaves, production delays!

FREE!
CONVENIENT BRIGHTWELL WALL-DISPENSER

SPECIAL IN-PLANT TESTING OFFERS 2A-3140
EXPIRES APRIL 30, 1960

AYERST LABORATORIES
22 East 40th Street • New York 16, N.Y.

☐ 1 dozen 1/4-lb. tubes "Kerodex" 51 for dry work at $10 per dozen
☐ 1 dozen 1/4-lb. tubes "Kerodex" 71 for wet work at $10 per dozen

FOR MORE EXTENSIVE TESTS IN DEPTH—A MONEY-SAVING OFFER

☐ 6 1-lb. tins "Kerodex" 51 for dry work *and* 6 1-lb. tins "Kerodex" 71 for wet work. Both for $25.00

A $12.50 VALUE—FREE! A BRIGHTWELL WALL-DISPENSER WITH EVERY 32 LBS. ORDERED! DISPENSES INDIVIDUAL APPLICATIONS

☐ 4 8-lb. tins "Kerodex" 51 for dry work at $67.20
☐ 4 8-lb. tins "Kerodex" 71 for wet work at $67.20

NAME OF COMPANY.....
STREET ADDRESS.....
CITY.....ZONE.....STATE.....
BY.....TITLE.....

QUICK DELIVERY FROM ONE OF OUR CONVENIENTLY-LOCATED WAREHOUSES! 6002A

Spruce up for Spring with...

AEROWASH-A

Now's the time of year to clean winter's accumulation of dirt and grime off your locomotives and cars — with AEROWASH-A, Wyandotte's all-purpose **liquid** cleaner for painted surfaces.

Versatile AEROWASH-A is equal to your toughest spring cleaning jobs. **Outstanding performance**— cleans quickly, effectively.

And AEROWASH-A **reduces labor costs.** Its faster, more effective action lets your men do cleaning jobs in less time. Ideal for either machine cleaning or hand brushing.

Because it's a liquid, AEROWASH-A is **convenient to use.** No waiting for it to dissolve. Just dilute, and you're ready to go. Can be piped directly into automatic operations.

AEROWASH-A is excellent for cleaning interiors, too. There's no fire hazard. And it's pleasant to use, no noxious odors. Safe to handle — nontoxic, mild on skin.

Your Wyandotte cleaning specialist will be glad to give you more details on AEROWASH-A. Just call him today. *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Also Los Nietos, California, and Atlanta, Georgia. Offices in principal cities.*

Wyandotte CHEMICALS

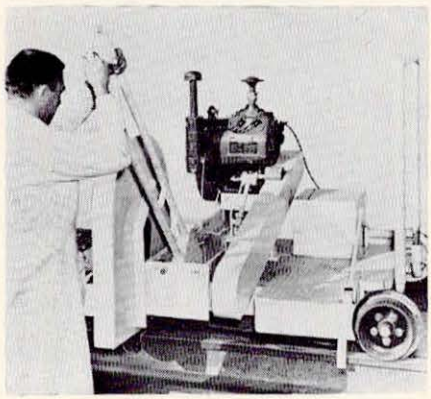
REG U. S. PAT. OFF.

J. B. FORD DIVISION

SPECIALISTS IN RAILROAD CLEANING PRODUCTS

PRODUCT NEWS

FOR ENGINEERS AND MAINTENANCE OF WAY PERSONNEL



Rail Cutter

Operated by one man, the new NCG-Obear portable rail cutter uses a 26-in. abrasive cutting wheel to crop rails in track. The manufacturer states that the machine can cut most rails in track in less than a minute without the need of water or oil lubricants and that it can also be used to crop secondhand rail preparatory to welding. *National Cylinder Gas Division, Chemetron Corporation, Dept. RA, Chicago 11.*

Tamping Power Jack

Faster production, reduced maintenance and easier operation are the features claimed for the new Nordberg Model D tamping power jack. A new all-hydraulic system has been incorporated in the Model D for the purpose of improving propulsion, raising the head, operating the jacking rams and setoff device and actuating the rail clamps.

The time between jacking stations is claimed to have been reduced by the hydraulic propulsion and the addition of four-wheel brakes. The track-raising time at each jacking station has also been reduced, it is claimed, by the addition of an automatic two-speed device to the lifting rams. The rail clamps of the new machine are designed to be automatically lowered or retracted as the lift rams are moved and are adjustable to various heights of rail. Other improvements claimed for the new machine include higher horsepower, improved plastic insulated wheels, an adjustable seat and a canopy. *Nordberg Manufacturing Company, Dept. RA, Milwaukee, Wis.*

Electric Plants

A new series of air-cooled, diesel-powered electric plants is available in capacities of 2,000, 5,000 and 7,500 watts.

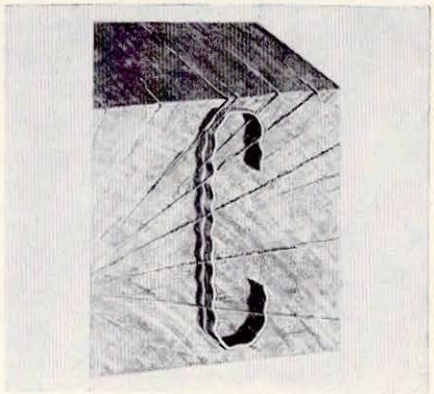
The manufacturer claims that the units are engineered for heavy-duty use in the railroad, construction, marine and industrial fields and can be used as a power source for camp cars, general lighting requirements, construction projects, communication facilities and stand-by power for lodges and recreation facilities.

Features claimed for the new electric plants are fuel economy, safety, and continuous full-load performance with a minimum of maintenance. The units are equipped with a solenoid-operated compression release for the purpose of ensuring easy, reliable starting. This device is stated to be standard on all remote starting models. The machines are also equipped with a counterbalanced crankshaft, muffler, fuel filter, oil-bath air cleaner, skid-type base and rubber "vibro-mounts" in order to hold vibration to a minimum. *Kohler Company, Dept. RA, Kohler, Wis.*

Ballast Regulator

Many changes have been made in the Kershaw Standard Ballast Regulator, Model 2FWJ, according to the manufacturer. Improvements include a heavier, welded steel frame, new reverse transmission coupled to the standard transmission, integral-mounted hydraulic turntable wheel and an all-steel roof. The new reverse transmission is connected to a right-angle drive by a slip-type universal-joint propeller shaft. The turntable is equipped with a safety lock to prevent dropping during operation. In addition, the improved machine is equipped with fully insulated cast steel wheels.

The wheels are mounted on 2½-in. axles set to a 96-in. wheel base. The axles are driven from a right-angle drive by a No. 100 roller chain with intermediate idler take-up sprockets. Removal from the track is accomplished by means of hydraulically propelled side set-off wheels. The photograph shows the ballast regulator equipped with a broom attachment. *Kershaw Manufacturing Company, Dept. RA, Montgomery 3, Ala.*



Anti-Checking Irons

Checking and splitting of ties are claimed to be retarded by the use of new "S" or "C" Krinkle-Lok anti-checking irons. The device features a corrugated design and a special rib which is claimed to lock the iron securely in the wood. The rib is located in the center of the unit and extends its entire length. It is said to act like the barb of a fish hook after being driven into a tie. *Koppers Company, Inc., Dept. RA, Pittsburgh 19, Pa.*

Track Surfacer

Low spots in track surface are claimed to be located and corrected by the use of the Nordberg Midget Surfacer. Consisting of one four-wheel carriage and three two-wheel buggies, all connected in a train, the device uses a 50-ft-long wire stretched between the end units at a point 8 in. above each rail to search out low spots. The carriage is located between the buggies and has mounted on it a cross-level board and a pointer assembly. The latter consists of two pointers and a graduated scale which indicates the correction required.

One end of each pointer is in constant contact with the wire above each rail. The wire is stated to be the "sighting" element on the unit and each wire and its pointer analyzes the surface of the respective rail independent of the other rail. When a low spot is found, the lowest point is determined and a hand jack used to raise the track back to surface, as indicated by the pointer. The spot is then tamped. *Nordberg Manufacturing Company, Dept. RA, Milwaukee, Wis.*

(More Product News on page 52)

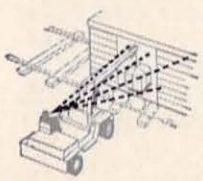
NOW

SILENT HOIST KRANE KAR

360° SWING!

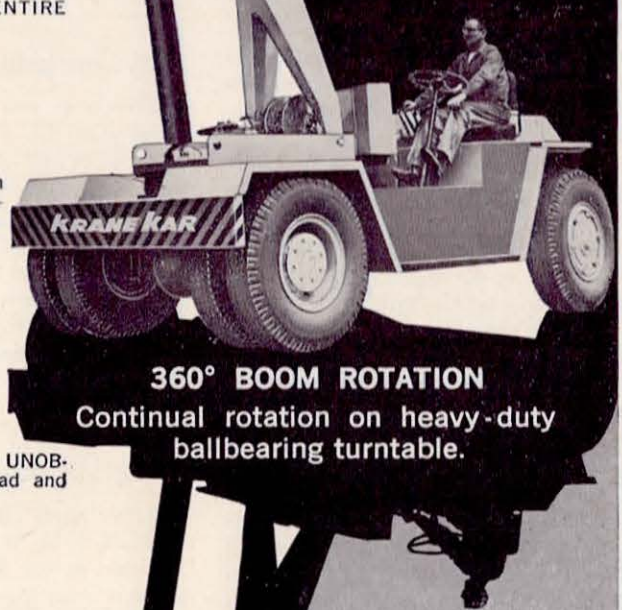
Boom pivoted well forward to provide working reach of ENTIRE BOOM LENGTH!

Dual traction tires for high flotation, maximum protection against blow-out upsets



KRANE KAR Operator has UNOBSTRUCTED VISION of Load and Crane at all times.

"BONUS" CAPACITY
With hydraulic outriggers, step up working capacity to 24,000 lbs. . . . biggest value on market.



360° BOOM ROTATION
Continual rotation on heavy-duty ballbearing turntable.

2 SIZES:
MODEL FAX—12,000 lbs. Cap.
MODEL FAY—20,000 lbs. Cap.

NOW! . . . another addition to the famous family of SILENT HOIST KRANE KARs . . . the original Mobile Power Swing Boom Crane!

SILENT HOIST enters its 41st year of Service to Industry by introducing the all-new KRANE KAR . . . all-hydraulic 360° Continuous Revolving Crane.

For complete details on this unique Crane, write today for illustrated Bulletin No. 99.

SILENT HOIST & CRANE CO.
BROOKLYN 20, N. Y.

PRODUCT NEWS

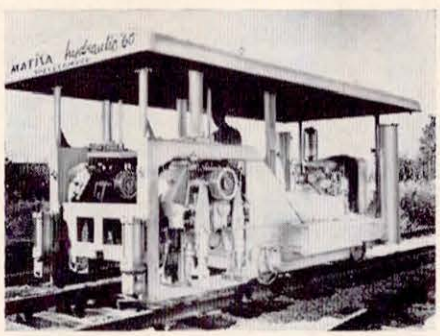
(Continued from page 51)

Power Tie Spacer

Working and traveling operations of the Pullman-Standard Power Tie Spacer are now claimed to be fully insulated. In addition, the spacing cylinder of the machine now has a stroke of 24 in.

This feature allows a tie to be moved 12 in. in either direction from the center or, if the cylinder is fully extended or retracted, a movement of the full 24 in. The manufacturer states that further movement of a tie is possible by repositioning the brakes and without releasing the tie or respotting the machine. The spacing mechanism consists of two electromagnetic brakes, one for each rail. All components, except the brakes, are hydraulically operated.

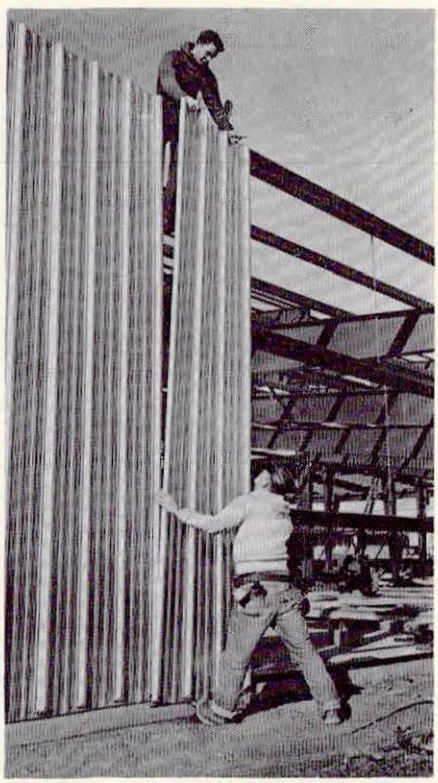
Features claimed for the machine include automatic squaring of ties during out-of-face tie-renewal operations, independent tie-tong operation for lining up skewed or bunched ties, nipping and holding of ties for spiking, and controlled power for prevention of track humping. *Pullman-Standard, Track Equipment Department, Dept. RA, Hammond, Ind.*



Production Tamper

Efficient use of hydraulics is featured in the new Matisa hydraulic "60" Speedtamper. The new model has been designed to use hydraulics for propul-

sion, tamping and vibration dampening. Propulsion is accomplished by means of a hydraulic motor coupled to a two-speed transmission which drives the front axle. This improvement is claimed to result in smooth and fast operation. The tamping units are controlled by reversible hydraulic motors which are coupled to a screw drive. It is stated that the new tamping system provides positive action and fast operation and eliminates the compressed air system and double clutches used on previous models. This is claimed to result in less maintenance and the elimination of costly mechanical parts. The machine incorporates a new hydraulically operated vibration dampener which is claimed to automatically prevent the transmission of vibration to the jacked-up track ahead of the tamper. *Matisa Equipment Corporation, Dept. RA, 1020 Washington Ave., Chicago Heights, Ill.*



Wall Panels

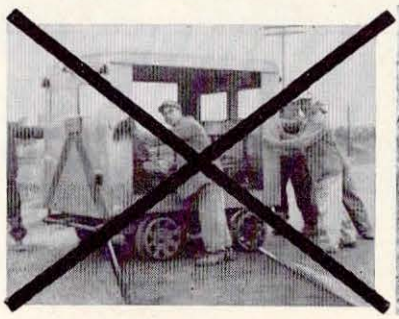
Two new types of Butler wall panels are available. One, known as Butlerib (see photo), is a 3-ft-wide corrugated steel or aluminum panel which is stated to be standard for wall and roof coverings on all Butler buildings. The other is called Monopanl. It is a complete exterior wall, fully insulated and finished on both sides in steel and aluminum, ready for use. *Butler Manufacturing Company, Dept. RA, Kansas City 26, Mo.*

(More Product News on page 54)

GANDY WAGON Section Crew Transporter

Gets a 9-man-crew on or off the track within two minutes!

- SECTION CREW TRANSPORTER—replaces the old track car, sheltered & heated, 9-seater transporter for highway & track, flanged-wheel —fitted with safety rims, all flanged wheels individually sprung, 4-wheel brakes on track.
- TRACK INSPECTION STATION WAGON AND STATION WAGON DELUX—a handsomely finished car on flanged wheel chassis, 9 seater, may have split seats in front, and sunroof.



NO MORE OF THIS!

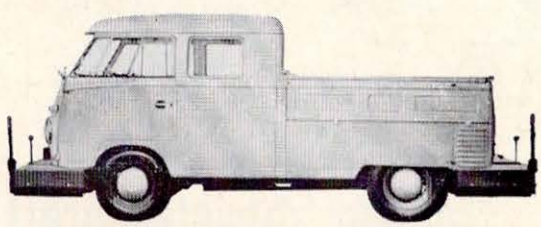
One man transfers Gandy Wagon from highway to track (or vice versa) in 90 seconds!

HiWay-Track Conversion of the Volkswagen . . . Your railroad can save thousands of section crew labor hours—the Gandy Wagon gets a crew on or off the track in 2 minutes, no waiting for train traffic to clear. You can send crews on the highway to the road crossing nearest the worksite. Reason: all Gandy Wagons are available with turntable jack—you can take a Gandy Wagon on or off the track at ANY crossing or turn it 180° around on the track and return on forward gear.

DOUBLE ECONOMY: You can now send crews on the highway to the road-crossing nearest the worksite—no waiting for train traffic to clear. You get outstanding economy of basic Volkswagen truck and car. Fleet maintenance is ½ the cost of any other truck. You also get these benefits: Unobstructed vision for track inspection (motor in rear); air-cooled engine needs no anti-freeze; low gas & oil consumption and long tire wear; crusing speed over rail or highway up to 50 mph.

Prices start from $3800. Write or call for a demonstration of the Gandy Wagon at work on your railroad. Leasing program also available.

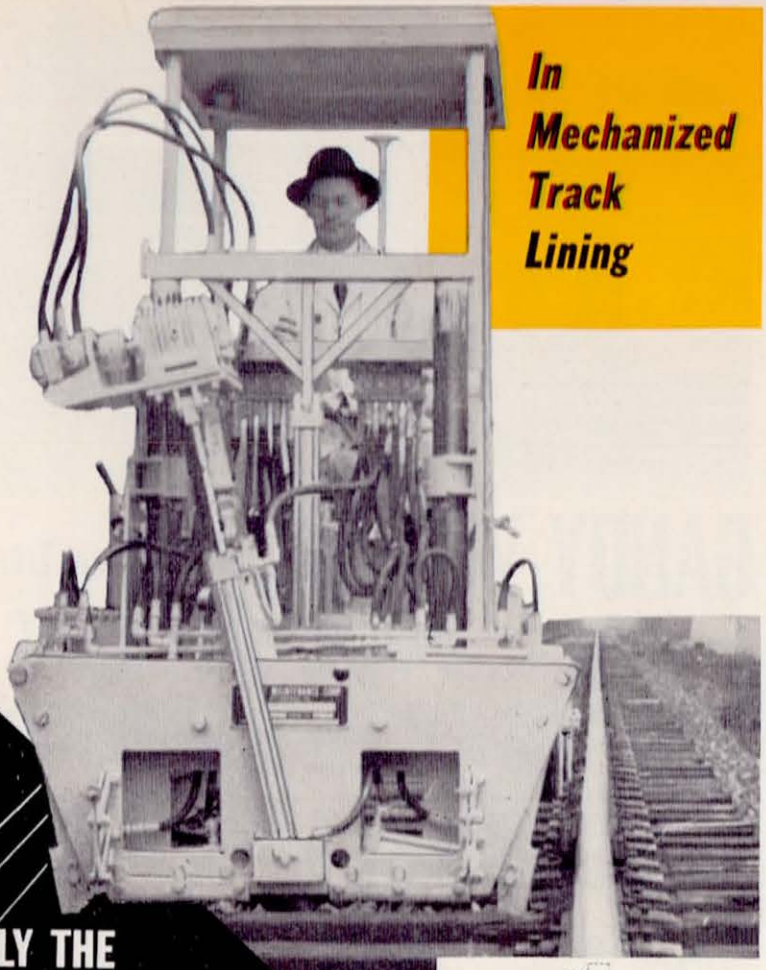
SIGNAL CREW
DOUBLE CABIN TRUCK
6-seater



GANDY WAGON CORP.

P. O. BOX 151, OYSTER BAY, N. Y.

Telephone Oyster Bay 6-0518

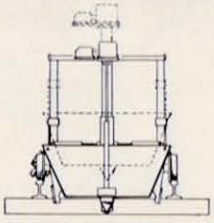


In Mechanized Track Lining

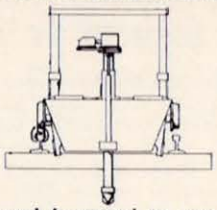
ONLY THE LINEMaster WORKS WITHOUT DISTURBING THE SURFACE

With sufficient lining speed to keep pace with the fastest mechanized gang, LineMaster exerts a horizontal push at base of the rail. It *does not* use weight of the rail for an anchor . . . and there is *no tendency to raise the rail and disturb the surface.*

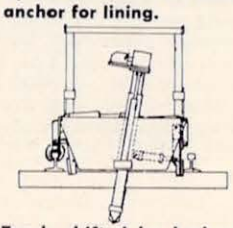
May we discuss LineMaster performance with you?



• Positioned at desired crib.



• Spud lowered to secure anchor for lining.



• Track shifted by hydraulic pressure.

35 YEARS OF SERVICE TO THE RAILROADS 1923-1960

Railway Maintenance Corporation

BOX 1888 PITTSBURGH 30, PA.

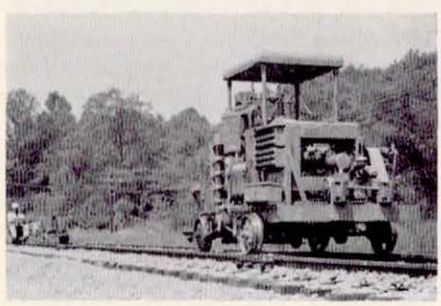
PRODUCT NEWS

(*Continued from page 53*)

Turret Derrick

Equipped for operation either as an aerial boom, universal derrick or earth digger, the Truco Turret Derrick can also be equipped with flanged wheels for operation on either highway or railroad. Available in five models, the machine is equipped with a three-stage telescoping boom which will lift 500 lb to working heights of from 30 to 100 ft, a 15,000-lb winch line for use with the boom as a derrick or in any normal winch operation, and a 20- or 30-in. diameter earth auger. The boom can be fitted with an insulated, two-man fiberglass basket or a 4-ft by 6-ft aluminum platform.

All operations are hydraulic. The unit is designed to be mounted just behind the truck cab in 16 in. of space. The turret can be rotated through 360 deg and can be retracted within 16 in. of space over the truck cab for storage. The Truco TRRC-32 railroad conversion kit is available for application to any truck chassis of 16,000 gvw and over to equip it for operation on railroad tracks. *Truck Equipment Company, Dept. RA, Denver 5, Colo.*



Radio Control Equipment

Remote control of track-lining systems is now claimed to be possible with the use of radio control equipment developed by Motorola. The new equipment consists of a transmitter, receiver and control box. The transmitter and the control box are installed on a cart that operates behind and separately

from the track-lining machine on which the receiving unit is installed. Both the cart and track-lining machine are furnished by the railroad. The manufacturer states that only one man, who rides on the cart, is required to perform both visual sighting of the track and machine operation.

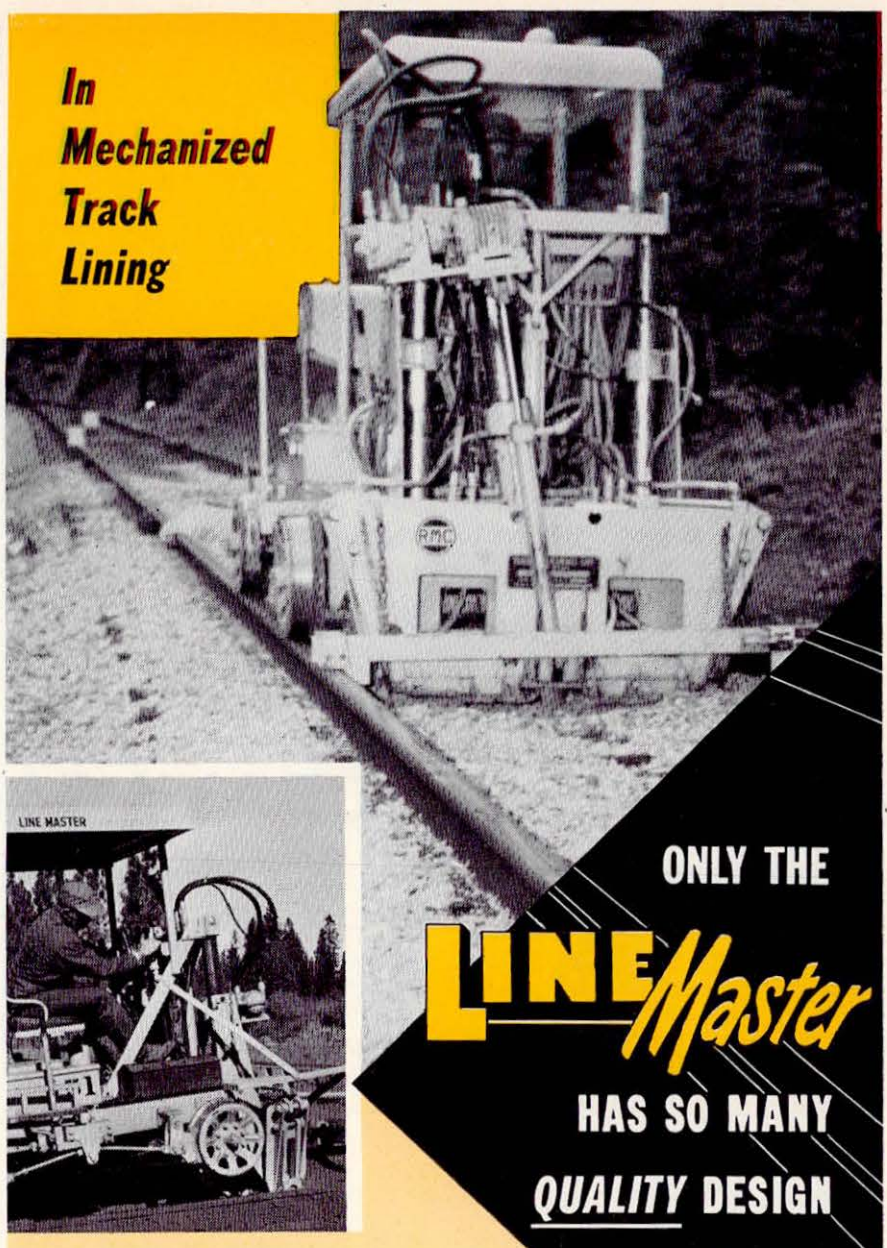
The operator also can control the operations away from the cart by hanging the control box around his neck by means of a harness provided for the purpose. The box remains attached to the cart by means of a cable. It is stated that the operator can control the track-lining machine up to 1,000 yd away without interconnecting wires. *Motorola Inc., Communications and Industrial Electronics Division, Dept. RA, Chicago 51.*

Motorized Scaffold

The new Athey Moto-Scaffold is designed to transport men, materials and equipment to jobs where scaffolding is required, such as tunnels, and to be quickly expanded into a full-sized work platform.

Equipped with rubber tires, which straddle the rails, and guide wheels, the unit can travel at speeds up to 20 mph, forward or reverse. The unit has three platforms, one center and two side, each 14 ft long, which are independently controlled so that each platform can be located at different heights or placed at the same level to make a platform 18 ft 1 in. wide by 14 ft long. The center platform is 8 ft wide and each side platform can be extended to 5 ft wide.

Capacity of the new Moto-Scaffold is stated to be 10,000 lb for the center platform, and 2,000 lb for each of the two side platforms. The machine is also equipped with power steering, two headlights on both front and rear and four stabilizing jacks. *Athey Products Corporation, Dept. RA, 5631 West 65th St., Chicago 38.*



LineMaster performs efficiently with all types of lining devices—wire, optical and electronic.

Power—36 hp engine with electric starting, three times the power of competitive machines. **Pumps/Motors**—durable Dennison units, fully interchangeable. **Operator Comfort**—adjustable seat and protective roof. **Mechanical Components**—first quality throughout. **Choice of Models**—retractable wheel or solid axle (for use with lining devices).

May we discuss Linemaster quality with you?

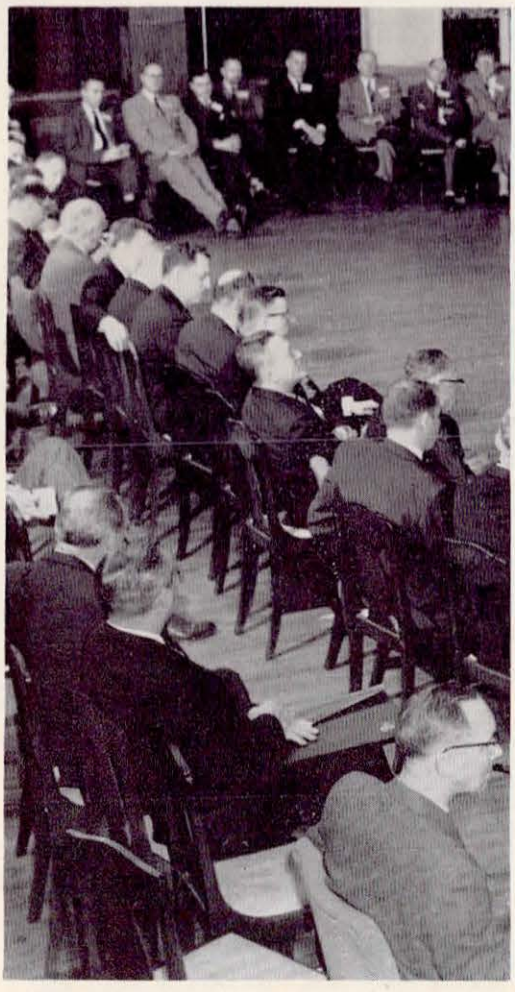
35 YEARS OF SERVICE TO THE RAILROADS 1925-1960

Railway Maintenance Corporation

BOX 1888 PITTSBURGH 30, PA.

A panel of four railroad men are on hand with candid answers to suppliers' questions at the Railroad Sales Development Seminar sponsored by the RPI. Above, W. J. Hedley, Wabash's Chief Engineer; C. N. Wiggins, L & N's Chief Mechanical Officer; and NYC's Director of Technical Research, J. J. Wright, await their turn while the Rock Island's top purchasing officer, H. A. Berry, makes a point.

SUPPLIERS SEEK ANSWERS TO TODAY'S SALES PROBLEMS



Straight talk in a Circle Conference marks the last of the three day workshop for 100 railway supply salesmen.

The "Significant Sixties" were barely a month old when the railway supply industry again served notice that it would be "ready, willing and able" in the decade ahead.

Early last month, 100 of the industry's salesmen participated in a Railroad Sales Development Seminar, sponsored by the Railway Progress Institute. There, experienced salesmen and beginners met to improve their sales understanding, sales techniques and sales service.

This annual Seminar is an integral part of RPI's continuing program in support of its Members' conviction that teamwork means prosperity for themselves . . . and for the American railroads.

One of 21 discussion groups which thrashed out such basic sales problems as coordination of deliveries to meet the customers' inventory and warehousing needs.

Participants are told what the railroads expect from salesmen in the freewheeling panel session. ►

Not even that American institution, the "coffee break", disrupts the searching debate. ▼

. . . Better Service to Railroads Goal of Unique Seminar

The Seminar is another progressive, industry-wide undertaking by the Member Companies of the Railway Progress Institute, listed below.

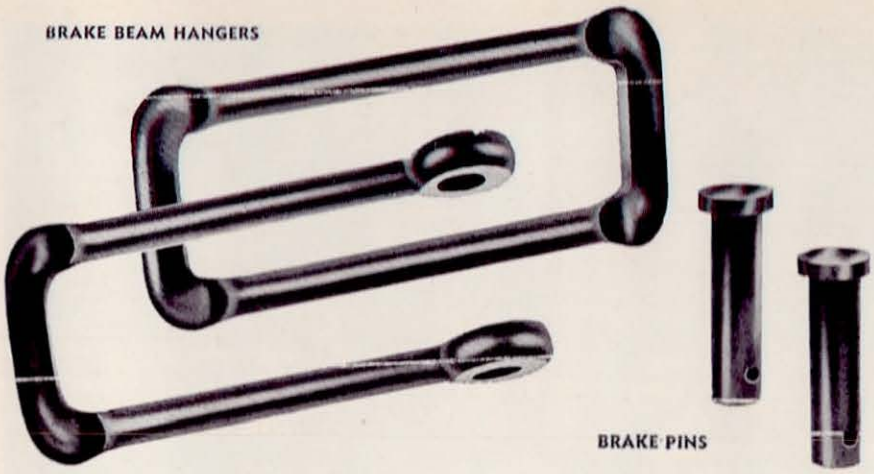
Adams & Westlake Co., The
Aeroquip Corporation
Air-Maze Corporation
Ajax-Consolidated Co.
Alexander & Alexander, Inc.
Aluminum Company of America
American Brake Shoe Company
American Car & Foundry Div. —ACF Industries, Inc.
American Creosoting Corporation
American Nut & Bolt Fastener Company
American SAB Company
American Steel Foundries
Anaconda Wire & Cable Co.
Apex Railway Products Co.
Birdsboro Corporation
Blaw-Knox Company
Brandon Equipment Co., Inc.
Brenco, Inc.
Buckeye Steel Castings Co., The
Buffalo Brake Beam Co.
Cardwell Westinghouse Company
Chicago Malleable Castings Co.
Chicago Pneumatic Tool Co.
Chicago Railway Equipment Co.
Cleveland Graphite Bronze Co. Division of Clevite Corp.
Crucible Steel Company of America
Davis Brake Beam Company
Dearborn Chemical Company
Edgewater Steel Company
Ellcon-National, Inc.
Erman-Howell Division Luria Steel & Trading Corp.
Fairbanks, Morse & Co.,
Fansteel Metallurgical Corporation, Rectifier-capacitor Div.
Farr Company
General American Transportation Corporation
General Electric Company
General Motors Corporation
General Railway Signal Company
General Steel Castings Corp.
Greenville Steel Car Company
Griffin Wheel Company
Gunthorp-Warren Printing Co.
Gustin-Bacon Mfg. Co.
Heywood-Wakefield Company
Holland Company
Illinois Railway Equipment Co.
Ingersoll-Rand Company
International Equipment Co., Ltd.
International Steel Company
Journal Box Servicing Corp.
Kaiser Aluminum & Chemical Sales Co.
Kerite Company, The
LFM Mfg. Company, Inc., The
Lamson & Sessions Company
MacLean-Fogg Lock Nut Co.
Magnus Metal Corporation
Matisa Equipment Corp., The
McConway & Torley Corporation
Mid-West Forging & Mfg. Co.
Miller Lubricator Company
Henry Miller Spring & Mfg. Co.
W. H. Miner, Inc.
Modern Railroads
Morrison-International Corp.
Morton Manufacturing Company
Nalco Chemical Corp.
National Malleable & Steel Castings Co.
New York Air Brake Company
Oakite Products, Inc.
Okonite Company, The
Pacific Car and Foundry Company
Pittsburgh Forgings Company
Poor & Company
Pullman-Standard
Pyle-National Company, The
Railroad Accessories Corp.
Rails Company, The
Rail-Trailer Co., The
Railway Maintenance Corp.
Railway Service & Supply Corp.
Railway Supply Manufacturers Association, The
Railway Track-Work Co.
Reynolds Metals Co.
Safety Electrical Equipment Corporation
St. Louis Car Company
Schaefer Equipment Company
Screw & Bolt Corporation of America
Scullin Steel Company
Servo Corporation of America
Simmons-Boardman Publishing Corporation
SKF Industries, Inc.
Sparton Railway Equipment, Div. of Sparton Corp.
Frank Speno Railroad Ballast Cleaning Co., Inc.
Spring Packing Corporation
Standard Car Truck Company
Standard Forgings Corporation
Standard Railway Equipment Manufacturing Co.
Superior Car Door Company
Superior Steel & Malleable Castings Co.
Symington-Gould Co.
A. Stucki Company
Thrall Car Manufacturing Co.
Trains Magazine
Transport Products Corporation
T-Z Railway Equipment Co.
Union Asbestos & Rubber Co.
Union Carbide Corporation
Unit Truck Corporation
United States Plywood Corp.
United States Railway Equipment Company
United States Steel Corporation
Vapor Heating Corporation
Waugh Equipment Company
Weir Kilby Corporation
Western Railroad Supply Co.
Westinghouse Air Brake Co.
Wheel Truing Brake Shoe Co.
Woodings-Verona Tool Works
Youngstown Steel Car Corp.

RAILWAY PROGRESS INSTITUTE

38 SOUTH DEARBORN STREET, CHICAGO 3, ILLINOIS

GEARED TO PROGRESS

BRAKE BEAM HANGERS



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"EXTRA" METAL AT CRITICAL POINTS IDENTIFY FLANNERY BRAKE BEAM HANGERS

Flannery provides additional metal at points where most wear occurs to upgrade operational safety and extend brake service life. Even after heavy use, a greater amount of cross-sectional metal remains on Flannery units than on most conventional AAR-approved brake beam hangers. Carefully selected steel, heat treated at controlled temperatures, assure maximum service life. "U" type Flannery hangers available in six to eighteen inch lengths; "Loop" types from eight to fourteen inches. Round and square-head Flannery Brake Pins furnished in any desired length.

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Because these ties are specially treated to hold up under grueling rail traffic for years. Since 1875 *International* has provided railroads with the finest, select timber. Each International Tie is stamped for life (in the year of installation) with the famous International Dating Brand . . . *proof* of years and years of service you can always count on.

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6tO
INTERNATIONAL TIES

Illinois Court Upholds Signal System Order

The Illinois Supreme Court has upheld a state commerce commission order requiring Central Illinois Public Service Co. to pay half the cost of converting an Illinois Central signal system on which transmission line interference produced false signals.

The opinion closes a case which began seven years ago.

IC's signal system—continuous automatic train-stop operating on 60 cycles ac—was installed in 1926 and first developed trouble due to introduction of foreign current in 1948. Both the length of CIPSC line paralleling IC track and the intensity of the load carried increased greatly during the same period.

Testimony before the commission indicated that the practical solution would be conversion of IC's signal system to 100 cycles ac. But the power company contended that IC could not recover the cost of conversion in the absence of evidence proving the power company negligent. Further, CIPSC said, Interstate Commerce Commission jurisdiction over the train-stop system is exclusive and the state commission would thus be barred from compelling payment by the company.

The supreme court ruled that "authority for the exercise of jurisdiction over the power company is not that it has acted negligently or with malice. Rather the power of the commission arises from the fact that the exercise of the power company's franchise by the transmission of current in close proximity to the railroad's tracks has created a condition which caused the existence of false signals and such signals constitute a hazard to the safety of the public and the employees of the railroad. Such condition gives rise to power and jurisdiction in the commission without regard to fault on the part of either public utility."

The court also ruled that "the commission has found a grave hazard to public safety existed by reason of foreign current escaping from the power company transmision lines. The commission could solve this problem by exercising its undoubted jurisdiction over the facilities of the power company, but the cost of moving the power lines away from the tracks of the railroad would be excessively high and would place an undue burden on its customers by an ultimate increase in its rate base. The railroad could, and has, converted its facilities at far less cost, and in a manner thoroughly compatible with Federal law. We can see no invasion of a Federally pre-empted area by this action."

N&W TO BUILD 85-TON HOPPERS (*Continued from page 18*)

its 85-ton design. The road had been a partner with the Chesapeake & Ohio and Pennsylvania in the development of a standardized 70-ton hopper car about two years ago (RA, Aug. 25, 1958, page 11). Sample cars to this design were built by all three roads and were subjected to thorough laboratory tests by the Technical Center of the National Malleable & Steel Castings Co. in Cleveland.

Tests proved so successful that the C&O, N&W and PRR are all now committed to the building of this design when they acquire additional 70-ton cars in the future.

The new car which the N&W will now build is an elongated version of this standardized 70-ton car. It is essentially a welded car with riveting used on the side stakes, top and bottom chords, center filler castings, strikers, and safety appliances. Use of riveting on the side structure has been adopted to counter the effects of car shakers which are increasingly popular with consignees. Benefits of riveting in sides were demonstrated during the course of the National Malleable test program for the 70-ton standardized cars.

Lengthening of the body of the 85-ton car to give a capacity of 3,011 cu ft did not require any variations from the structural sections and plates used in the 70-ton car which has a 2,603 cu ft capacity and 43-ft 6-in. length over pulling faces. The new cars will have an equivalent overall length of 51 ft 4⅝ in. Height over the top chord in both car designs is 11 ft.

Both cars have the 41.2-lb AAR center sill. Body plates which contact the lading are all low-alloy, high-tensile, corrosion-resistant steel. These sheets are all the same thicknesses which would have to be used if the car were to be built in carbon steel, which has lower tensile strength. While this increases the light weight, it has been calculated to appreciably lengthen the life of the body. The estimated light weight of the new 85-ton model is 65,000 lb.

It is not necessary to use empty-load brakes on the new car. It will have standard AB 10 x 12, single-shoe brakes with manual slack adjuster. For the first time, freight cars to be built at Roanoke are to be equipped with roller bearings. These cars will also be fitted with 36-in. multiple-wear wheels to conform with the latest AAR recommendations on wheel loads and wheel diameters. The car will have standard draft gears and E couplers.

The 85-ton cars are to be built at a unit cost of $12,000 as compared with $10,090 for the standardized 70-ton model with equivalent specialties.

Railroading After Hours with Jim Lyne

PERFECTION IN PR—When was there ever a public relations man in any industry who, on dying, got the kind of praise that Roob Allie (Michigan RR Assn and NYC) has received from the Michigan press? Letters about Roob keep coming in. Just the other day NYC Lawyer George Wyatt sent me a full-column editorial on Roob from the Midland, Mich., Daily News. What the paper said about him is pretty nearly a complete set of specifications for perfection in press relations work. Just look at this:

"This fireball was in business to serve you with the kind of information he knew you could and would use in your newspaper. He knew the difference between news and advertising and arranged separation of the two.

"He furnished information and background for stories about the rails when asked for it. He never stuck his foot in the door when a reporter sought to dig for details on a wreck or other yarn adverse to rails. But he would give the viewpoint of the rails and stand up and fight for them to the last ditch."

TRUCKING INFLAMMABLES—Who's duty is it to establish public policy about how big a load of gasoline or explosives can be moved in one vehicle or combination by highway?

A vehicle with 1,000 gal.—if it meets with a mishap—would do a lot less damage than one loaded with several times that quantity. Railroads have a legitimate interest in this question because of the hazard to trains—but all highway users and municipalities have exactly the same interest. If railroad people, as good citizens, take the leadership in a safety campaign in this sector, there are always critics ready to accuse them of trying to handicap a competitor.

DIRTY CARS—On the question of penalty charges on consignees who fail to clean cars they unload—I note that IC Commissioner Howard Freas got into this subject, in his maiden speech on the ICC. It was back in December 1953 that he suggested not accepting a car from a consignee—and continuing to levy demurrage charges on it—until all debris was removed.

With freight cars costing as much as they do, and investment funds not easy to come by, it's clear that all practicable steps must be taken to maximize service performed per car. Prompt cleaning is one step in that direction. Heavier loading is another.

When you want to encourage economic action, inducements usually work better than exhortation. Discounts in the rate for added lading—and charging demurrage on cars not fully unloaded—ought to help.

THE SAME ALL OVER—A. D. J. Morin of Vancouver has sent me a recent copy of the South African Railways Magazine including a speech by the deputy general manager, J. P. Hugo. Talking to a group of industrialists, Mr. Hugo explained that railway rates had been made low on low-value commodities and relatively high on goods of high value making "our high-rated business a sitting duck for road competition."

The problem of a change in railroad rate-making has arisen in every country—whether its railroads are owned by government or not. Everywhere, reliable common carrier service is being sniped at by pick-and-choose competitors. It is no great credit to the free nations that so few of them seem willing to come to grips with this problem. It doesn't bother the Commie countries much—where government owns the trucks as well as the railroads.

IC, SP Open Barge Line Bid

► **The Story at a Glance: Illinois Central and Southern Pacific will try to steer transportation diversification into new channels in hearings scheduled to begin March 15 in Washington, D.C. The issue: Joint application by IC and SP to acquire the stock of the John I. Hay Co., one of the nation's 10 largest barge lines.**

Powerful opposition will come from barge operators, their associations, even from truckers (who aren't directly involved in the case). Opposition, generally speaking, will be based on charges that the railroads' control of the water carrier will lead to destructive competitive practices and higher charges to shippers.

From the beginning, however, IC and SP have declared that the Hay Co. will continue under independent operation, that diversification of this type will increase (rather than decrease) competition and that approval of the application is in the public interest.

Illinois Central President Wayne A. Johnston, long-time champion of transport diversification, is scheduled to be the railroads' opening witness tomorrow as IC and SP seek to turn diversification talk into action. He'll be followed by a number of other witnesses from both roads and by 35 to 40 outside witnesses —shippers and public officials, primarily.

Mr. Johnston will keynote the railroad case for permission to make an investment in diversification—a case in which the ICC is being asked to authorize:

- IC and SP to have control of Midwest Barge Co. through ownership of all its capital stock (Midwest, a new company, is jointly controlled by the two railroads).
- Midwest to acquire control of Hay through purchase of capital stock.
- IC and SP to acquire control of a common carrier by water.
- Midwest to acquire through liquidation and to operate all Hay properties.
- Hay to transfer its certificates of public convenience and necessity to Midwest.

It's expected that initial hearings will continue into the week of March 21, as rail and supporting witnesses present their case. A second hearing will follow, probably in six to eight weeks, for opposition testimony and perhaps rebuttal from the applicants.

Opposition will include segments of the trucking industry, barge operators and their association, American Waterways Operators, Inc., which has set up a "strategy council" to assist in organizing opposition to the IC-SP application. About eight other railroads have also filed as intervenors. All will intervene as their interest may appear. At least one road is expected to support the application.

As IC and SP see it, the public interest will be served by approval of the transaction. They point to a number of factors:

- Hay has few traffic salesmen; the railroads have many. Rail solicitation forces will be made available "and will cooperate in . . . securing for the water carrier additional traffic of a character for which water transportation provides an inherent advantage." The same personnel advantages would apply to industrial development promotional work.
- Rail-water and truck-water joint rates and through routes will be established where none exist now—involving the two railroads, Hay and rail motor carrier subsidiaries. Existing joint through rate and route arrangements involving Hay will not be disturbed.
- Cooperative efforts on behalf of the water carrier and establishment of rate and route arrangements can produce substantial increases in Hay traffic. The ultimate effect "will be to the end of developing, coordinating and preserving a transportation system by water, highway and rail adequate to meet the needs of the commerce of the area served . . . The result of the achievement of this objective will be to recognize and preserve the inherent advantages of each mode . . . and to provide the members of the shipping public with an overall transportation service, making available such water, rail or highway service or combination thereof as may be adequate to meet their particular needs and be most economically and efficiently rendered."

Rate Sniping Begins

As the rail-barge hearings drew near, elements of the inland and coastal water carrier industry began sniping at rail rate-making practices, via a "report urging the limitation of geographic discrimination in the competitive pricing of transportation." Target of the water carriers is rail application of selective rate cutting. What they want is application of antitrust principles to "discriminatory" rail rate-making.

Briefly, the water carriers propose introduction of two features of antitrust legislation in rate regulation:

- Permission for competitive sellers of transportation to complain of discriminatory practices of other modes.
- Application of the Robinson-Patman Act concept that prices may not be reduced selectively for competitive purposes "lower than necessary to meet the competition."

Interpretation of Robinson-Patman, the water carriers say, provides that cost differences to be considered in the justification of different prices to different customers may not be based on out-of-pocket costs. That is, "the cost saving brought about by gaining an additional customer should not be passed along to that customer alone but to each other customer who by contributing to the overall volume has done his proportionate share to contribute to the overall reduction in cost."

The suggestion, one barge line president commented, "is that the standards invoked to justify charging less for a long haul than a short haul along the same route—the justly famed Fourth Section—should be used in judging the lawfulness of all competitive rates."

The water carriers propose amendments to the Interstate Commerce Act to provide that "when any common carrier . . . maintains rates, charges or practices in competition with another mode of transportation which cause, make or give any discrimination, preference or advantage which would be undue or unreasonable in the absence of such competition, such discrimination, preference or advantage shall be unlawful where the effect thereof may be substantially to lessen competition, or tend to create a monopoly in any line of commerce, or to injure, destroy or prevent competition with said carrier. In comparing rates, due consideration shall be given to all factors affecting the relative desirability of the service offered. No discrimination in rates shall be held to be unlawful which makes only due allowance for differences in the costs of providing transportation, services or facilities, or which is made to establish uniform group rates reasonably calculated to preserve competition between shippers similarly situated."

The report starts with the premise that "taking as a measure . . . any of the usual yardsticks of efficiency, it is conceded that water transportation, for those commodities adapted to water movement, has the advantage . . . Clearly, with this showing of economic advantage, water transportation cannot be destroyed unless some distortion of normal competition is permitted."

Train, Tank Truck Crash Kills Two

The second train-tank truck grade crossing collision in less than a week has brought fiery death to a father-and-son engineer-fireman team in Kansas. A third crew member and the truck driver were seriously burned in the crash, which involved a local freight on the Katy southeast of Chanute, Kan., on the evening of March 5.

Just four days earlier, the flaming collision of Santa Fe's "San Francisco Chief" and a two-trailer fuel oil rig near Bakersfield, Calif., killed 14 persons, including the engineer, fireman and truck driver (RA, March 7, p. 36).

In the Katy accident, press reports said the force of the collision broke locomotive cab windows and the cab was engulfed in flames. The engineer, W. R. Arey, 63, was trapped. His son, Fireman R. N. Arey, 40, and the headend brakeman escaped from the cab and rolled in snow at trackside to extinguish their flaming clothing. The younger Arey died the next day.

Meanwhile, Santa Fe acted quickly in the wake of the Bakersfield tragedy.

The road filed suit in Kern County, Calif., Superior Court asking damages totaling $2,000,000 from Oglesby Brothers Trucking Co. And ATSF President E. S. Marsh wired California Governor Edmund G. Brown that "we have been deeply concerned about the lack of adequate legislative restrictions on such large volume transportation over the highways of dangerous explosives and inflammables and failure of such operators to observe laws relating to stops and other necessary precautions which obviously were not heeded in the Bakersfield accident. We urge you to use your good efforts toward remedying these circumstances and want you to know that all railroad people stand ready to help public officials adopt measures designed to minimize or eliminate these hazards to employees, passengers and to public safety on the arteries of traffic . . ."

In the damage action, Santa Fe alleged negligence in the operation of the tanker. Mr. Marsh said that "investigation of the collision and tank truck explosion disclosed that the truck without stopping was driven onto the track in front of the approaching train. This was a violation of the California Motor Vehicle Code which requires oil tank trucks to stop not less than 10 feet nor more than 50 feet from railroad tracks, and further requires that the oil truck must remain standing while any train is moving toward the crossing."

Santa Fe's president also noted that the train approached the crossing in broad daylight, with whistle blowing and bell ringing. He said the crossing was protected in accordance with prescribed standards, the train was running on schedule, the weather was clear and visibility unobstructed.

BLE Arbitration to Start April 5

► **The Story at a Glance: Arbitration hearings on the BLE's wage dispute with the carriers will begin April 5 in Chicago, before a board of six arbitrators. The arbitration agreement provides that an award be made within 40 days of the start of hearings, but the deadline may be extended by agreement of carriers and union.**

While the railroads and the Engineers agreed to procedures for a binding settlement of their dispute, the SUNA was coming closer to completion of a strike ballot. President Neil N. Speirs said returns from SP, WP and GN switchmen would probably be received by the end of last week. In balloting already completed, he said, union members voted heavily in favor of a strike if a satisfactory wage agreement is not reached.

By mid-May, at least one railway labor dispute—the Engineers' wage case—may be settled. An arbitration agreement, signed in Chicago March 5, sets up a schedule which makes May 15 the initial time limit for filing a binding award. But the term may be extended by mutual agreement.

(In 1954, last time the BLE went to arbitration, hearings began April 26 and didn't end until July 30. An award was made Aug. 13.)

Under the agreement, the board will confine its decision to two specific questions:

- Shall all or any part of the request of the Brotherhood of Locomotive Engineers, dated March 2, 1959, be granted?
- Shall all or any part of the proposal of the carriers served on or about March 20, 1959, be granted?

In the March 2 notices, the BLE demanded a 12% wage increase, incorporation of the present cost-of-living allowance in basic rates and continuation of the cost-of-living escalator. The carriers countered with demands for a 15-cent per hour wage reduction and elimination of the escalator clause.

In addition to specifying the questions to be decided, the agreement provides that:

- Any question(s) may be withdrawn, on notice to the board or its chairman, at any time prior to filing of an award.
- Approval of a majority of the six board members will make an award valid and binding.
- The board will fix the date or dates on which an award will become effective, and the award will remain in effect unless and until it's changed in accordange with provisions of the Railway Labor Act.
- The award and evidence of the proceedings will be filed with the clerk of the U. S. District Court for the Northern District of Illinois, Eastern Division.
- Differences arising as to the meaning or application of the award will be referred back to the board or (by agreement) to a subcommittee of the board for a ruling.
- Members of the board will be G. W. Knight and J. E. Wolfe, representing the carriers; R. E. Davidson and D. S. Beattie, representing the brotherhood; and Archibald Cox and Richard A. Lester, neutral members.

While the BLE and the carriers were readying their case for arbitration, the SUNA was moving toward break-off of mediation and then either arbitration or creation of an emergency board. SUNA President Speirs said union headquarters had returns from all but three of the approximately 20 properties where the Switchmen hold contracts. He said balloting was running about 99% in favor of withdrawal from service if an acceptable agreement is not reached.

SUNA's president said that after completion of balloting, the union will discuss its release from mediation with the National Mediation Board. As matters stand, he indicated, the organization "wouldn't look with favor on arbitration."

People in the News

ASSOCIATION OF AMERICAN RAILROADS.—**Coast Guard Rear Admiral Frank T. Kenner (ret.)** has been retained as representative of the American railroad industry in Hawaii.

BURLINGTON.—**H. P. Parker** appointed general freight agent, Dallas, Tex. **S. M. Graham** named general agent, Dallas. **O. B. Sandidge** appointed assistant general freight and passenger agent, Dallas, succeeding **R. A. Craig,** retired.

Kenneth Z. McGill, roadmaster, Ottumwa (Iowa) division, named assistant engineer of track, Galesburg, Ill.

CANADIAN NATIONAL.—**J. F. A. Piche,** trainmaster at Parent, Que., appointed trainmaster at Joffre, Que. **J. A. R. Boutin,** assistant superintendent at Joffre, Que., named assistant superintendent at Levis, Que., his former position abolished.

A. Murray McDaid, division freight agent at St. John's, Nfld., named division freight agent at Moncton. He is succeeded at St. John's by **George T. Gillis,** who has been traveling freight agent at St. John, N.B. **Willard P. Cudmore** succeeds Mr. Gillis.

A. C. Oliver appointed chief of the pass bureau, succeeding **J. B. Donoghue,** retired.

CHICAGO & NORTH WESTERN.—**Carl S. Anderson,** assistant land commissioner, Chicago, appointed land commissioner there, to succeed **F. J. Klein,** who retired Feb. 29. **R. A. Miller, Jr.,** general land agent, named to succeed Mr. Anderson, and in turn is replaced by **Charles P. Jevne.**

C. M. Towle, industrial development agent, assigned to industrial development, Minnesota, with headquarters remaining at Chicago, to succeed **M. B. Lithgow. E. M. Lewis,** industrial development agent, Chicago, assigned to industrial development for Illinois outside of the Chicago metropolitan area, replacing **V. C. Giegold.** Messrs. Lithgow and Giegold's promotions announced in RA, Feb. 29, p. 46.

COTTON BELT.—**Joseph O. Burnette** appointed general agent, Kansas City, Mo., succeeding **H. E. Johnson,** who retired March 1.

ELGIN, JOLIET & EASTERN.—**W. C. Meyer,** assistant trainmaster-road foreman of engines, appointed supervisor of personnel, Gary division, Gary, Ind.

P. A. Pellouchoud, acting trainmaster, named trainmaster, Gary division, South Chicago.

GENESEE & WYOMING.—**John N. Kiefer, Jr.,** appointed general manager, Retsof, N.Y. succeeding **M. J. Fitzgerald,** retired.

KANSAS, OKLAHOMA & GULF—MIDLAND VALLEY — OKLAHOMA CITY-ADA-ATOKA. — W. L. Bibb named assistant superintendent of transportation at Muskogee, Okla.

LAKE TERMINAL—NEWBURGH & SOUTH SHORE —DONORA SOUTHERN—McKEESPORT CONNECTING — NORTHAMPTON & BATH — HANNIBAL CONNECTING.—William D. McNeilly appointed assistant to president with headquarters at Pittsburgh, Pa.

LOUISVILLE & NASHVILLE.—**J. S. Swan** named supervisor motive power utilization and attached to the Transportation Department. **C. W. Watson** appointed assistant superintendent of the Cincinnati Division. **B. C. McClanahan,** superintendent of the Eastern Kentucky division, has retired.

MILWAUKEE.—**Rex E. Anderson,** traveling freight and passenger agent, Winston-Salem, N.C., appointed general agent there. **Roland E. Brazda,** city passenger agent, New York, named district passenger agent at that point.

MISSOURI PACIFIC.—**J. H. Greason,** division engineer, Central division, Wichita, Kan., appointed district engineer, Gulf district, Palestine, Tex., succeeding **Wendell Fields,** who retired Feb. 29.

H. C. Macomber, superintendent communications, St. Louis, promoted to general superintendent communications there, to succeed **R. A. Hendrie,** retired. **J. R. French,** assistant superintendent communications, St. Louis, named to replace Mr. Macomber, and in turn is succeeded by **J. W. Hinkle.**

NEW YORK CENTRAL.—**R. A. Cameron** appointed supervisor of material distribution with headquarters at Cleveland, Ohio. **J. V. Basso** named district administrative assistant to the district engineer with headquarters at Cleveland, succeeding **R. F. Melick,** retired.

NORTHERN PACIFIC.—**E. L. Musolf,** assistant electrical engineer, named electrical engineer with headquarters in St. Paul, succeeding **R. C. Sorenson,** retired. **T. J. Olson,** assistant to the electrical engineer, succeeds Mr. Musolf.

PENNSYLVANIA.—**L. P. Keoughan** appointed supervisor-TrucTrain, and **J. E. Lust** named assistant supervisor-TrucTrain, both at Chicago. **E. F. Schroeder** named supervisor-track, Logansport, Ind. **C. A. Thomas** and **E. L. McConkey** named superintendent, stations and supervisor, stations, respectively, with headquarters at Chicago. **C A. Fritzson** appointed manager, freight sales and services, Chicago.

WANTED:

One or two car ferries for operation on the Detroit River.

Must meet Coast Guard requirements as to hull, machinery, boilers, etc.; capacity for carrying 25 to 40 freight cars (40 preferred); a four or five track boat with a total length of track sufficient to accommodate the above cars, with a molded beam of around 65 ft. and 18 ft. car deck clearance; two forward and two aft propellers, with steering gear and rudder forward and aft; a minimum of 2600 H. P. engines—if steam, with oil burning boilers, Diesel powered preferred.

If you have one or two boats to offer for sale, please advise the undersigned as to price, complete description and where they can be inspected.

H. A. Christ, Purchasing Agent,
Wabash Railroad Company,
1656 Railway Exchange Building,
St. Louis 1, Missouri

Harvey C. Hopkins

Arthur E. Martin

Supply Trade

Harvey C. Hopkins has been elected vice president for purchasing of **ACF Industries, Inc.,** a newly created post. Mr. Hopkins has served in recent years as president of **King Container Corp.** of New Jersey.

Arthur E. Martin, assistant to the vice president in charge of traffic operations, **General American Transportation Corp.,** has been named vice president in charge of the traffic department.

Robert D. Ernst, general stores buyer, **Railway Equipment Division, Railway Equipment Manufacturing Co.,** has been appointed manager of purchases. **A. F. Spradling** has been purchasing agent.

Robert N. Kramer, formerly senior production release engineer, **Electro-Motive Division** of **General Motors Corp.,** has joined the **Rail-Trailer Co.** as manager, products division.

Earl R. Smith, general manager, **Vendome Tank Car Co.,** has become special assistant to the president, **North American Car Corp.,** with headquarters at Tulsa, Okla., following purchase of Vendome by North American.

Carl A. Reeb, western manager of **Kerite Co.** at Chicago, has been appointed assistant to the president. His headquarters remain in Chicago.

OBITUARY

George Laxar, 57, general subscription fulfillment manager for all **Simmons-Boardman Publishing Corp.** magazines, including Railway Age, and general manager of the company's Bristol, Conn., office, died March 6 of a heart attack.

Arthur J. Loughren, retired assistant general sales manager of the **Primary Battery Division of Thomas A. Edison Industries,** died in Orange, N.J., Feb. 26.

Albert P. Withall, 80, president and chairman of the board of **W. H. Miner, Inc.** and **Enterprise Railway Equipment Co.,** died March 6 at his home in Chicago.

John B. Stevens, service engineer, **Journal Box Servicing Corp.,** attached to the Baltimore & Ohio, died March 1 at Cleveland.

Arthur B. Murphey, 68, retired assistant freight traffic manager, **Rock Island,** died March 3 at his home in Jay, Okla.

Robert E. O'Grady, 64, retired assistant vice president, **Erie,** died Feb. 29 at his home in Phoenix, Ariz.

Marc A. Glover, general agent, **Frisco,** died March 4 at St. Louis.

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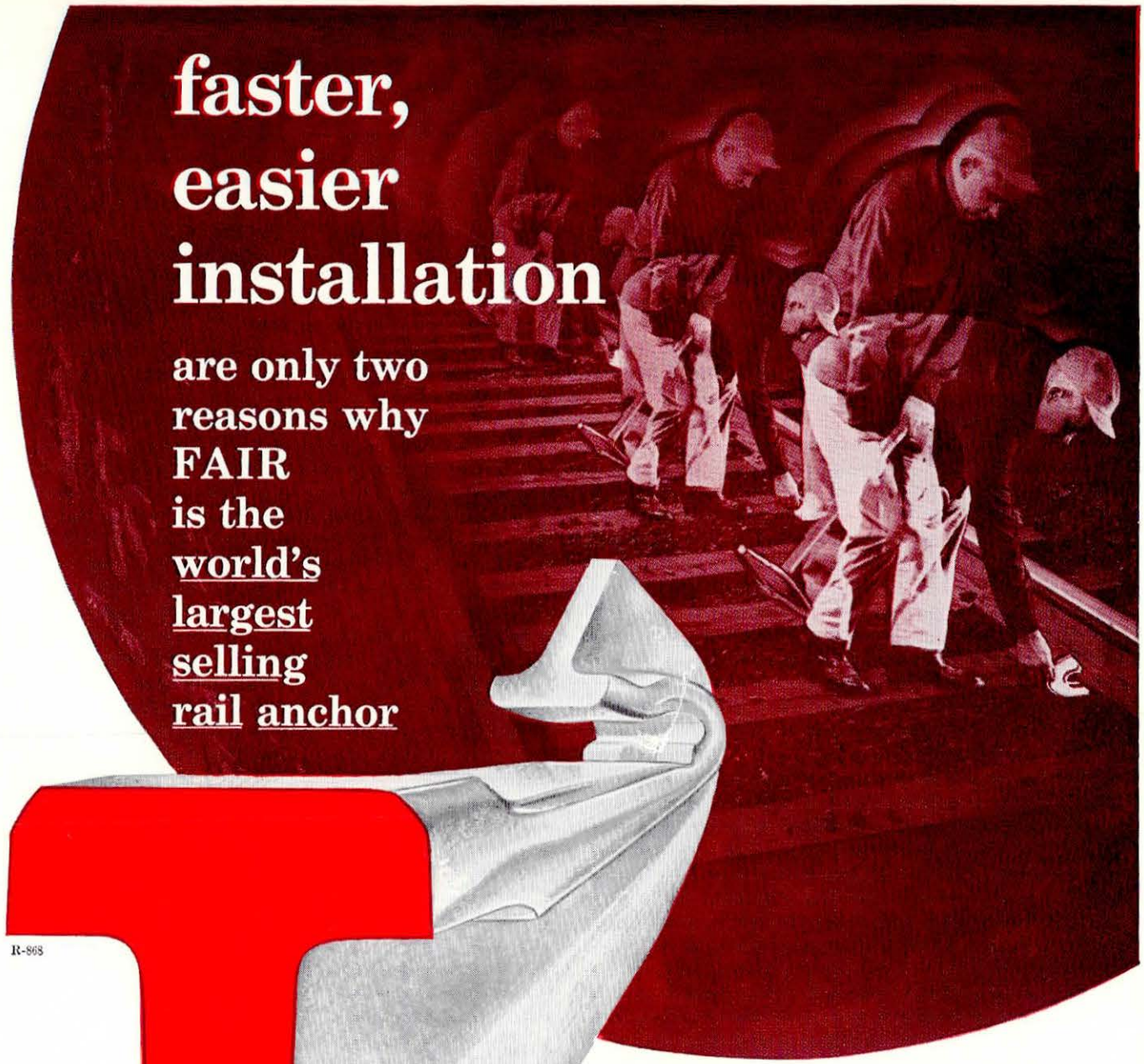

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T-POWER DESIGN MEANS FASTER, EASIER INSTALLATION.

OVERDRIVE-STOP assures proper application — every-time. Custom manufactured to fit all types of rail regardless of condition.

STRIKING FACE provides a perfect target for fast, accurate application by men or machines.

Once you see the heavy-duty, one-piece construction of FAIR rail anchors, you'll know why installation is fast and easy — manually or by machine. The T-POWER *striking-face* makes fast application sure and easy. The exclusive *overdrive-stop* assures a perfect grip every time. Result: Faster application—Greater Protection—Lower Costs.

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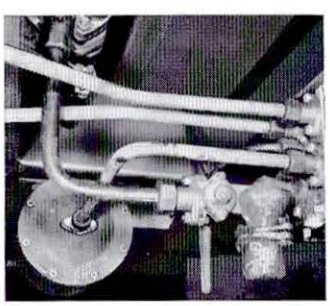
NEW GOULD SILCONIC PLATE Increases Battery Life 25%-FREE!

A vital contribution to motive power batteries, Gould's NEW Silconic Plate prevents grid corrosion, the most common cause of battery failure.

Sound, tested and proved, the principle is simply this: Gould introduces silver and cobalt into active materials of the positive plates. The silver and cobalt migrate to—and collect on—positive grid members, forming an insoluble oxide surface impervious to acid and oxygen attack. The longer the battery operates, the deeper the silver-cobalt penetrates into the grid metal, thus greatly prolonging life. In applications where batteries are idle for periods of time, Gould's Silconic Plate prevents migration of materials to the negative plate, effectively reducing self-discharge within the cell.

Further overall strength is achieved when arsenic is added to the antimonial alloy of the plate, resulting in an extremely dense, homogeneous grid free of flaws. This new physical and chemical strength—together with Gould's compact battery design—add up to the best motive power battery you can buy. Write today or call your local Gould representative. He's listed under "Batteries Industrial" in the yellow pages. Gould-National Batteries, Inc., Trenton 7, N. J. *IN CANADA, WRITE TO GOULD-NATIONAL BATTERIES OF CANADA, LTD., 1819 YONGE STREET, TORONTO, ONTARIO.*

More Power to you from **GOULD**



4-D Wrought Iron Pipe safeguards B&O air brake systems

The picture shows a recently installed air brake piping system on a B & O freight car. It's in for a lot of punishment. That's why it's 4-D Wrought Iron.

During fabrication, severe bends can split, kink and weaken ordinary pipe materials. Or, bends spring back or require stress-relieving after installation. Threading can be a problem too. If threads aren't clean and sharp, a leaky, dangerous system results.

Once fabricated, air brake piping is really "in for it." Constant shock and vibration can concentrate stresses in any minute flaw or crack in the pipe, causing early failure of the entire system. If the piping stands up to fatigue stresses, there is *always* corrosion. Attacking internally and externally, corrosion can eat brake piping out of service and into the scrap pile. And, with most pipe materials, once corrosion starts, failure isn't far behind.

To beat down premature failure due to severe fabrication difficulties, fatigue failure from shock and vibration—*and corrosion*—B & O relies on 4-D Wrought Iron for *all* their vital rolling stock.

For additional information, write for *Wrought Iron for Railroads*, A. M. Byers Co., Clark Bldg., Pittsburgh 22, Pa.

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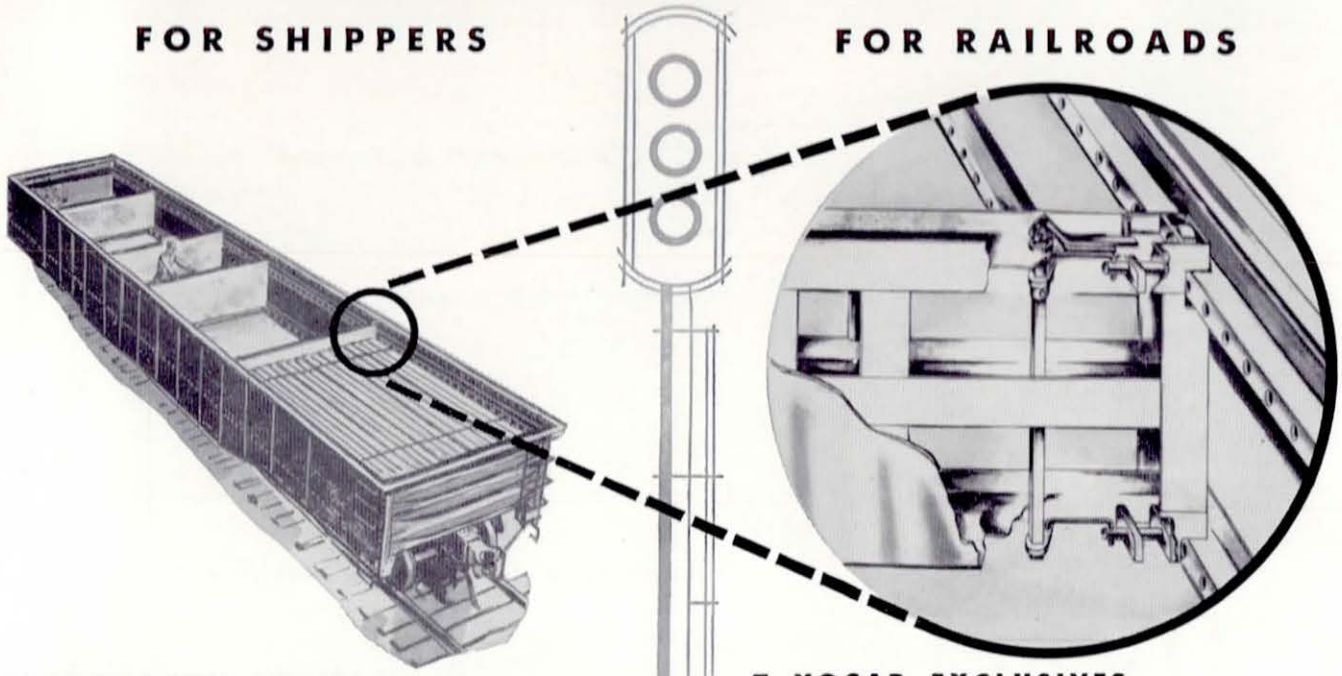
FOR SHIPPERS **FOR RAILROADS**



COPPERWELD STEEL COMPANY, WARREN, OHIO, MANUFACTURERS OF ARISTOLOY, THE ARISTOCRAT OF ALLOY STEELS, REPORTS:

"Yocar movable bulkheads save us up to 1800 pounds of dunnage and 6 man-hours per car. They require a minimum of effort to position and lock for shipping. To date all loads have arrived without damage claim." Copperweld is just one of many shippers saving time and money with Yocar safe shipping devices.

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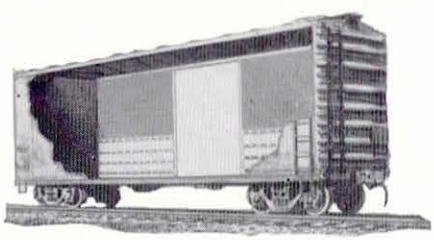
7 YOCAR EXCLUSIVES:

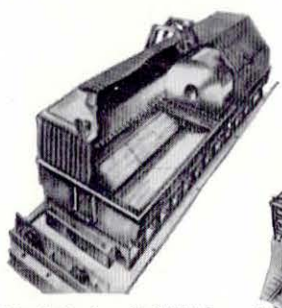
- "ZEE" TRACKS . . . Cut installation time in half over double angle construction.
- OVERSIZED CASE-HARDENED LOCKING PINS . . . Easy operating, allows for distortion of side walls.
- ROLLER SUSPENSION . . . Case-hardened rollers allow fast, effortless positioning.
- FOUR PER CAR SET . . . Meets AISI Traffic Committee's recommendation for 48" high car walls.
- POWERFULLY BOLSTERED . . . by five 6" "I" beams . . . built to last.
- PERFECT COMPANION . . . for Yocar 3-section roofs.
- TWO FACINGS available . . . no extra cost . . . choose ¼" steel or wood.

YOCAR MAKES A COMPLETE LINE OF DAMAGE CONTROL DEVICES

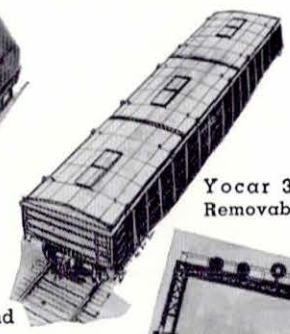
Safe-Cargo Anchor Rails for piggy-back trailers.



Yocar Safe-Cargo Econo-Guard —increases car wall life.



Shock-Spring Coil Skids and protective hood with seam-lock and corner strength.



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MARKET OUTLOOK *at a glance*

Carloadings Rise 0.8% Above Previous Week's

Loadings of revenue freight in the week ended March 5 totaled 557,607 cars, the Association of American Railroads announced on March 10. This was an increase of 4,454 cars, or 0.8%, compared with the previous week; a decrease of 37,868 cars, or 6.4%, compared with the corresponding week last year; and an increase of 13,233 cars, or 2.4%, compared with the equivalent 1958 week.

Loadings of revenue freight for the week ended Feb. 27, totaled 553,153 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ending Saturday, Feb. 27

District	1960	1959	1958
Eastern	88,877	91,163	88,176
Allegheny	108,637	104,534	101,731
Pocahontas	50,433	50,085	49,029
Southern	104,457	113,095	108,717
Northwestern	57,730	59,756	56,156
Central Western	100,246	111,555	100,118
Southwestern	42,773	45,146	47,265
Total Western Districts	200,749	216,457	203,539
Total All Roads	553,153	575,334	551,192
Commodities:			
Grain and grain products	42,190	52,563	47,266
Livestock	3,348	3,584	4,493
Coal	108,179	109,499	118,215
Coke	11,693	10,586	6,754
Forest Products	36,111	38,697	32,943
Ore	20,232	16,284	14,223
Merchandise l.c.l.	33,612	38,689	46,957
Miscellaneous	297,788	305,432	280,341
Feb. 27	553,153	575,334	551,192
Feb. 20	571,625	583,741	494,919
Feb. 13	580,103	567,188	533,186
Feb. 6	587,933	565,752	532,396
Jan. 30	601,900	582,456	550,532
Cumulative total, 8 weeks	4,679,325	4,567,229	4,356,006

PIGGYBACK CARLOADINGS.—U. S. piggyback loadings for the week ended Feb. 27 totaled 9,999 cars, compared with 6,900 for the corresponding 1958 week. Loadings for 1960 up to Feb. 27 totaled 79,869 cars, compared with 53,742 for the corresponding period of 1959.

IN CANADA.—Carloadings for the eight-day period ended Feb. 29 were not available when this issue of Railway Age went to press.

New Equipment

FREIGHT-TRAIN CARS

► *Boston & Maine.*—Ordered 20 cabooses from International Car.

► *Canadian Pacific.*—Ordered 300 53½-ft, 70-ton flat cars from Dominion Steel & Car Corp., Trenton, N. S. Of the total order, 100 cars will be equipped with end bulkheads.

► *Central of Georgia.*—Ordered 100 covered hoppers from Pullman-Standard (RA, Jan. 25, p. 39).

► *Union Pacific.*—Ordered 200 70-ton, 46-ft gondolas from Gunderson Brothers Engineering Corp., Portland, Ore. Cars will be equipped with self-clearing unloading doors for handling of sugar beets, coal and similar commodities. Order is part of $26,000,000 freight and passenger car program previously announced (RA, Mar. 7, p. 35).

► *U. S. Department of Interior.*—Ordered 25 helium cars from ACF.

PIGGYBACK

► *Rock Island.*—Ordered 80 40-ft trailers for piggyback service at a cost of approximately $500,000. Fruehauf Trailer Company and Brown Trailer Company will each build 40 units.

LOCOMOTIVES

► *Duluth, Missabe & Iron Range.*—Ordered 13 1,800-hp locomotives from Electro-Motive Division for delivery in April.

► *Indian Railways.*—Asked bids on 60 meter gage, main line diesel locomotives for delivery before the end of 1960, according to Foreign Commerce Weekly. Offers should be in New Delhi by April 15. Copies of bid documents are available from the India Supply Mission, 2536 Mass. Ave. N.W., Washington 9, D.C.

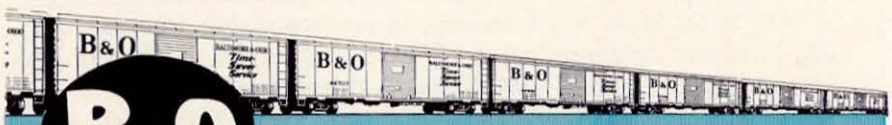
► *Taiwan Railways.*—Received a $5,900,000 loan from the Development Loan Fund for the procurement of diesel locomotives and spare parts. An earlier DLF loan of $3,200,000 in November 1958 was earmarked for purchase of 11 diesel locomotives and installation of CTC on 55 miles of line.

New Facilities

► *Western Pacific.*—Projects under way or authorized include construction of grade separations at Sacramento and Stockton, Calif., involving total cost of almost $3,000,000. WP, SP and city of Stockton will participate in cost of the former project; WP and city of Sacramento will split cost of latter. Total cost to WP will be about $900,000. Other major projects include replacement of gallows frame and apron at 25th Street Mole, San Francisco, to produce savings in repair costs and eliminate detouring when slip is out of service, $207,000; and replacement of 500 ft of timber lining with concrete lining in main line tunnel No. 36 near Clio, Calif., $183,000. WP also reports 40% completion of railroad work (construction of four tunnels, three bridges and grading for roadway) on 27-mile line relocation project made necessary by construction of Oroville Dam.

• TIME-SAVER Service supplies speedy door to door shipment of less-carload freight. But, it's the baby-like treatment B&O gives LCL that grows on shippers. B&O people exercise unusual care on trains and platforms, in yards and terminals to handle each shipment as though it were a family affair—with baby-like care.

Ask our man!



Arpaia Would Revamp Transport Regulation

Three separate federal transport agencies with "clearly defined" activities in the fields of planning, economic regulation, and administration are what Interstate Commerce Commissioner Anthony Arpaia proposes as a substitute for the present setup of "amorphous, confusing, ineffectual and duplicative governmental activities."

Mr. Arpaia made his proposal on what he called the last occasion on which he would talk as an ICC member—in a March 11 speech to the Chicago chapter of the ICC Practitioners' Association. His resignation from the Commission becomes effective this week.

The present setup has proved to be both "wasteful and ineffectual," the commissioner charged. Noting that the Interstate Commerce Act has been amended about 200 times, he said it now resembles "a patchwork quilt." He added: "The reason is that, in the last 40 years, practically every amendment has been made under the stress of emergency. Pieces were added to meet the problems of the moment with little regard for consistency, uniformity and harmony. There was no opportunity for the development of a congruous plan of legislation."

Later on in his address the commissioner conceded that there might be sound reasons for separate treatment of each form of transport, but he insisted that each such deviation "should be justified."

Contract Rail Welding To Be Offered by Linde

A Ribbonrail Welding plant is being constructed by Linde Co., Division of Union Carbide Corp., at Harrisburg, Pa., near the Steelton Mill of Bethlehem Steel, to produce continuous-welded rail on a contract basis for eastern and southeastern railroads.

A spokesman said the Harrisburg installation is the first of several dual line contract welding sites planned by Linde. The company will continue to lease and sell Ribbonrail Welding equipment in addition to offering the contract welding option.

W. S. Winn, manager of Linde's Oxweld Railroad Department, said the company's entry into contract rail welding is the result of mounting requests from railroads all over the country for the service.

A simultaneous announcement by Linde and the Pennsylvania said the new Harrisburg plant will provide continuous welded rail for the PRR's program.

TELL THE PEOPLE

STORMS: primer for a 'Jet Age'

Digging out last week from the winter's worst storm, the Eastern Seaboard was still reeling from the effects of snow on transportation. The storm, particularly devastating because it had hit from North Carolina to Maine almost simultaneously, had dumped up to 24 inches of snow on cities where deep snow is something of a rarity. With March winds at work, 10-ft drifts blocked highways, closed airports.

Tied-up transportation crowded other news out of the headlines. Thousands of stranded bus commuters created a near-riot as New York's Port Authority Bus Terminal—the world's biggest—moved a bus an hour. On Massachusetts highway 95, 150 stalled trailer trucks kept all traffic blocked for eight hours.

From Baltimore to Boston, only details differed. Superhighways, where they were kept open, cut speed to a crawl. Airline jets stayed in the hangars.

Snarled transportation kept people home and streets empty even after snow stopped and downtown business areas were cleared.

AND THE TRAINS? . . . PICTURES TELL THE STORY

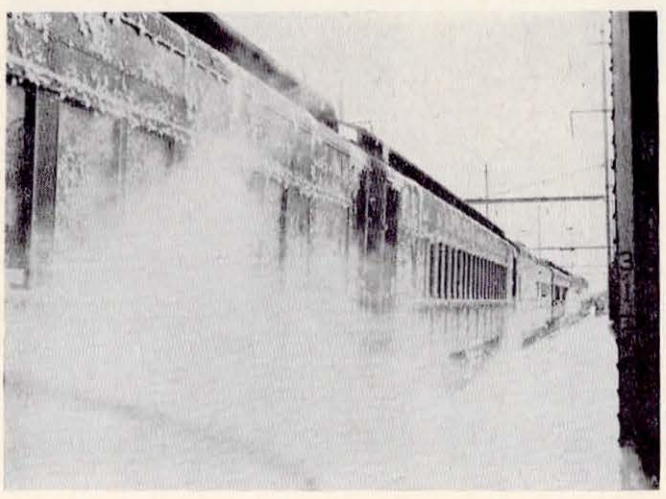
STORMS: with passengers or freight, trains were running

1 In the thickest weather, only trains were running.

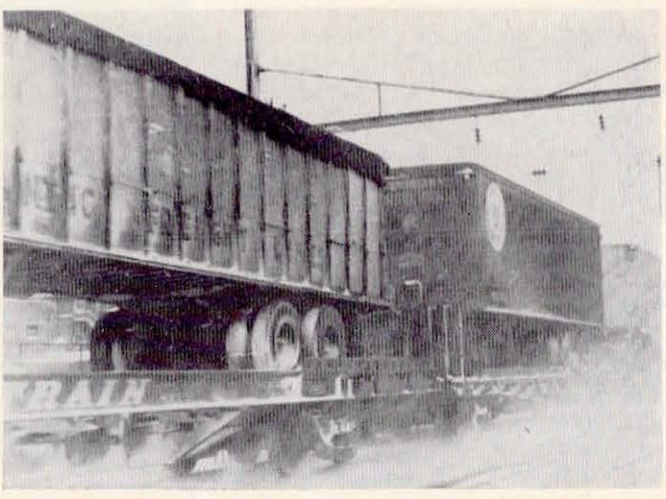
2 At Roanoke, Va., the Norfolk & Western took 17 in. of snow in stride.

5 The NYC added cars to handle the load and pleased surprised passengers.

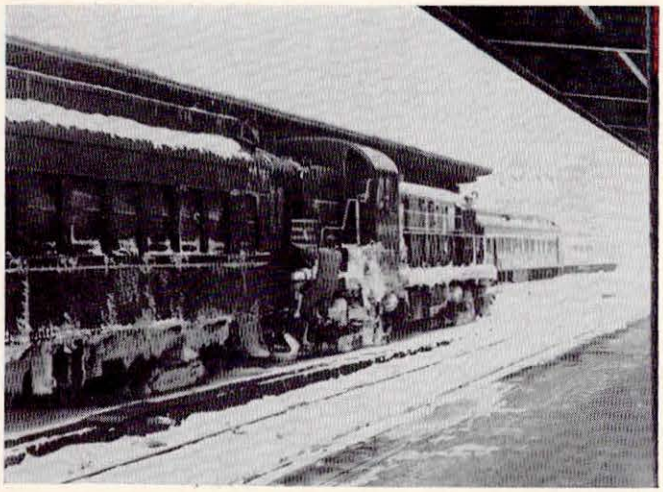
6 The Central had plenty of chances to try out its new jet snow blower. (It worked fine.)



9 Passengers came first, in warm cars (with extra steam to heat all outdoors).

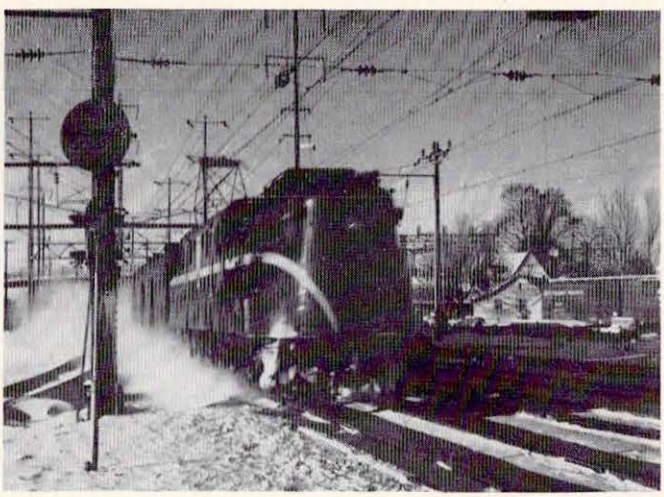


10 Freight—including trailers that could have been blocking roads in Baltimore and Boston—came next.

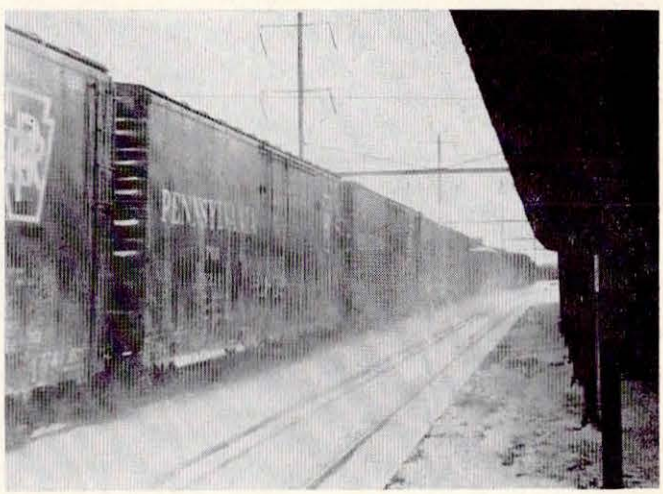


3 In Syracuse, N.Y., passengers abandoned the Thruway for the New York Central.

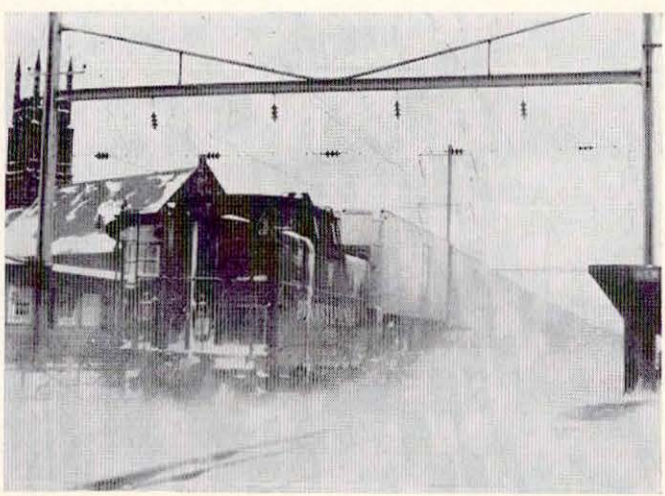
4 Fort Washington, Pa., commuters caught the Reading at the regular time.



7 Behind new paint, 25-year-old Pennsylvania electric kept passengers moving.



8 And the freight moved too.



11 And the caboose came last, just as it always does.

TELL THE PEOPLE

Railroads are more than fair-weather friends

You Ought To Know...

A production line for manufacture of 85-ft piggyback flat cars has been opened by ACF at its Huntington, W. Va., plant. First order for the new line is 200 cars for Trailer Train. A sample car was approved last week by a Trailer Train inspection team headed by J. Howard Long, chief mechanical officer. An ACF spokesman said the new installation is planned as an additional source of supply to the piggyback flat-car production line at the Berwick, Pa., plant.

Loss of its mail contract—coupled with declining patronage—forced the Belfast & Moosehead Lake to discontinue passenger service last week on its 33-mile line between Belfast and Burnham Junction, Me. But a spokesman said the celebrated short line would retain its passenger equipment because "it's possible we may operate excursions during the summer if there is enough demand."

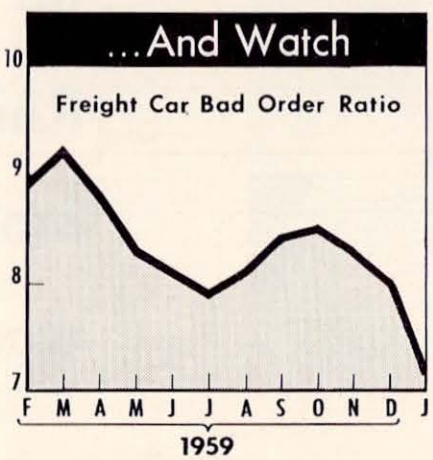
An IBM 1401—a "faster and more versatile" computer—will go to work for Soo Line early next year. It will replace an IBM 650 and various other data-processing units. In addition to performing all functions now being performed by the 650 and related units, the 1401 (which uses magnetic tape instead of punched cards) will permit the exchange of tapes in interline freight settlements with other roads using tape computers.

America is wasting a great "created" resource — railroad transportation —by lack of use, Southern President Harry A. DeButts told a joint meeting of the Transportation Club of Atlanta and the Southeast Shippers Advisory Board in Atlanta last week. The answer, he said, is "conservation through use. . . . With railroads, as with your muscles, it may be stated axiomatically that the greater the use the greater the strength."

A rail worker's rally in Kansas City, Kan., last week heard BLF&E President H. E. Gilbert describe management's work rules notices as "a job-destroying assault on railroad workers." He said the changes sought by the railroads "constitute a threat to the nation's economy and a menace to the national security."

Rail rates on wheat, rye and flaxseed will be cut April 8 by five northwest carriers in an effort to counter truck competition. Rate cuts ranging up to 13½ cents per 100 lb will apply on movements to primary grain markets in the Twin Cities and Duluth-Superior from points in Minnesota, eastern North Dakota and northeastern South Dakota. The rate proposal has been filed with the ICC and the Minnesota Railroad and Warehouse Commission by the GN, NP, Soo Line, DM&IR, and DW&P.

New barge competition for grain traffic out of Kansas City can be expected by railroads this year. Improvements in the Missouri River will permit larger tows, of up to 10 or 11 barges—roughly equivalent in grain-carrying capacity to a 100-car freight train. Moreover, the ICC recently granted permission to Sioux City and New Orleans Barge Lines to engage in towing service, which will permit movement of grain in privately owned barges subject only to expense of towage. The Kansas City Board of Trade says the river situation "has become especially important in the handling of export grain since the rail lines to the Gulf ports have so far refused to establish a realistic rate from Kansas City."



Telling the railroad story on the "grass roots" level—as the Eastern Railroad Presidents Conference has done through its community committees—has helped "turn the tide of public opinion about our industry," Delaware & Hudson President William White said last week. The ERPC formula: "Know what it is you want to say; train a sufficient force of people in what is to be said, and how to say it; say it . . . over and over and over again; give the program the help of a small staff of trained public relations men in the field."

Great Slave Lake rail line in northwestern Canada has been delayed while advantages of two proposed routes—one from Edmonton and the east, the other from Peace River, B. C., and the west—have been explored. The Manning Royal Commission, charged with selecting a route, has now completed public hearings and is preparing a report recommending a route.

General American sees 1960 as potentially the best year in the company's history, from a profit standpoint. One factor in the optimistic outlook: Four railway divisions—car leasing, car manufacturing, Airslide and Dry-Flo and piggyback—are operating at an encouraging rate (existing and anticipated orders, GATX estimates, will keep car production facilities "solidly scheduled throughout 1960").

A former passenger station at Columbus, Miss., has been converted into an office building for the Columbus & Greenville. The structure now houses C&G's general offices, accounting, treasury, traffic and freight claim departments.

There'll be no immediate changes in St. Lawrence tolls if Canada's Seaway Authority has its way. Speaking to the Hamilton, Ont., Rotary Club March 3, J. C. Lessard, authority vice president, called for "a stop to suggestions" for such changes. A full five-year review of the situation will be undertaken in 1964, he said, and it will take at least that long for a firm pattern to become established on the seaway.

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Civil Engineers Should Speak Up

No segment of railroading has suffered more acutely than heavy engineering work, under traffic and earnings conditions as they have been since the end of the recent war. When new capital is scarce and traffic is stationary or declining, relatively little is likely to be spent on substantial roadway improvements. Replacements of the car fleet and motive power, and high-return yard and train control projects, absorb most of the available capital.

Yet better line and grade—and building new lines to serve new traffic—are to the railroad industry what a healthy circulatory system is to the human body. It's a painful sight—a 1960 model highway paralleling a railroad of 1910 or earlier.

No other profession has, over the years, been more closely identified with railroad progress than that of civil engineering. The opportunity for great works of engineering on the railroads has not become a matter of history—as is conclusively shown by the fact that the relatively few railroads not unduly short of capital funds find plenty of large jobs. (For example, the big Salt Lake fill).

Compared with 1913, there's hardly anything than can be done on a railroad today as economically as digging and filling. Yet relatively little of it is being done on the railroads. In the decade 1921-30 roadway outlays were 53% of total capital expenditures. In 1949-58 the roadway ratio was 31% (including yard modernization and train control).

When money is spent on line improvements it is "sunk." It can't be transferred to another location (as locomotives and cars can be). You can't transfer or salvage a tunnel or a fill. It isn't good management to sink too much scarce new money in improvements to a line on which traffic is shrinking—not even if the outlay would pay handsomely at past (or even present) traffic density.

●

The principal cause of this unwholesome state of affairs is the profligate competitive capital expenditure which government is pouring into highways, inland waterways and air terminals—*without any concern as to whether these expenditures are improving total transportation economy or not*. The most forthright and perceptive indictment, by a disinterested authority, of government's reckless behavior in this area, comes from Professor James C. Nelson (author of the Brookings Institution study, Railroad Transportation and Public Policy) in a recent article.* He says:

> "It has generally been assumed by the policy-makers that the privately-owned agencies, dependent almost wholly on their earnings and the private capital markets for capital funds, can somehow attract the funds needed to develop fully all cost-reducing and service improving innovations. . . . This easy assumption. . . . [is] likely to lead to tragic consequences if not corrected before long."

The irony of the inhibiting effect on the exercise of railroad civil engineering genius—of government's preference for socialization of investment in fixed transportation plant—is that other civil engineers are deeply involved in curtailing the opportunities for large-scale engineering projects afforded to the railroads' engineers.

●

For example, it is, of course, the civilian branch of the Army Engineers which is doing all the manifold economic mischief with its inland waterways' development. And it is civil engineers on the public payroll—or in the employ of contractors doing government work—who have made the St. Lawrence monstrosity and the gigantic federal highway boondoggle possible.

Do these engineers realize what they're doing? We doubt it. Railroad engineers would probably find some, and perhaps many, of their colleagues in other industries receptive to the challenge to economic and political morality which has been so well expressed by Professor Nelson.

Anyhow, no other professional group on the railroads is having its creative genius inhibited by government policy in transportation to the degree that the railroad engineers are. Hence, no other railroad professional group has a greater right or duty to raise its voice.

Mere protest isn't enough. Just what changes in government policy do the engineers believe are needed—so railroad engineers will be called upon to rebuild railroads, to make them technologically just as up-to-date as 1960's highways, waterways and air terminals are?

*"Policy Issues and Economic Effects of Public Aids to Domestic Transport" in the Autumn 1959 issue of the quarterly Law & Contemporary Problems (Duke University). This issue contains many important articles on transportation policy—the contributors including also Chairman David I. Mackie of the Eastern Railroad Presidents Conference, and Professor Merrill J. Roberts of the University of Pittsburgh.

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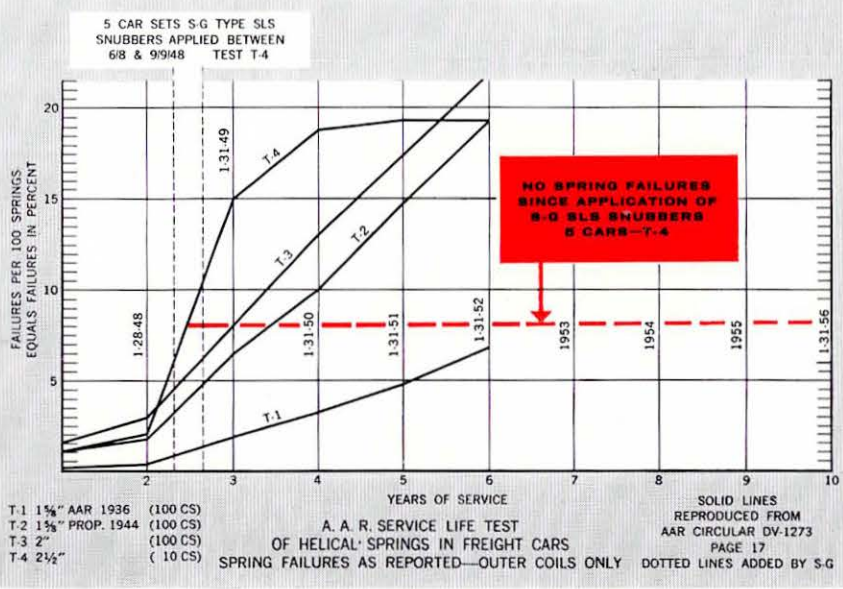

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